

GOVERNMENT OF INDIA

DEPARTMENT OF ARCHAEOLOGY

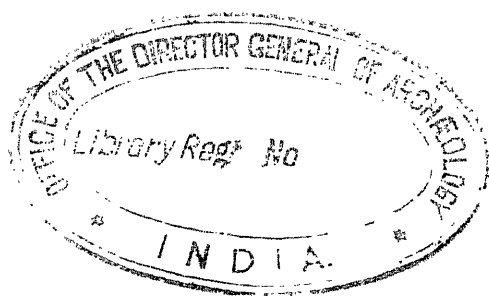
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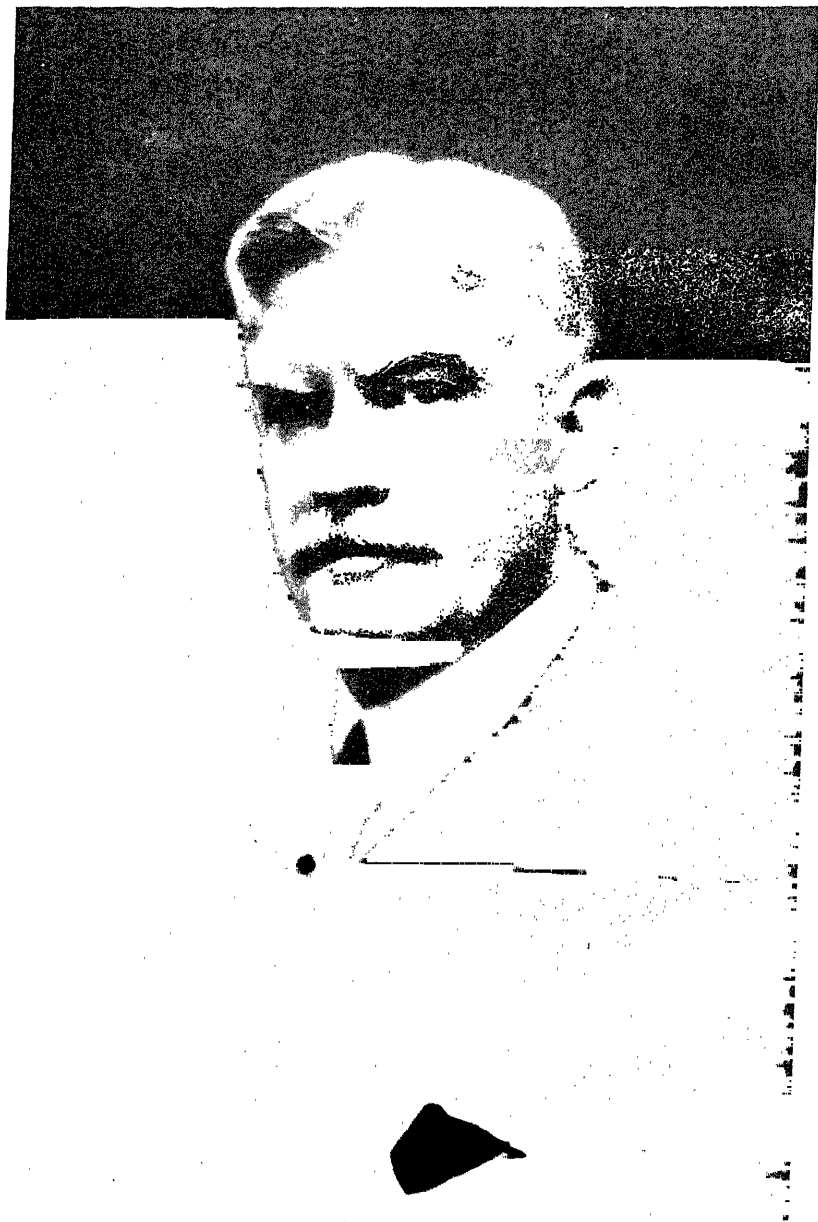
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ERNEST R. GRAHAM

Trustee of the Museum and member of the Building Committee

# FIELD MUSEUM OF NATURAL HISTORY

FOUNDED BY MARSHALL FIELD, 1893

PUBLICATION 248

REPORT SERIES

VOL. VII, No. 2

## ANNUAL REPORT OF THE DIRECTOR

TO THE  
BOARD OF TRUSTEES

FOR THE YEAR 1927



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CHICAGO, U. S. A.

January, 1928

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Bequests to Field Museum of Natural History may be made in securities, money, books or collections. They may, if desired, take the form of a memorial to the memory of a person or cause, to be named by the giver. For those desirous of making bequests to the Museum, the following form is suggested:

### FORM OF BEQUEST

I do hereby give and bequeath to Field Museum of Natural History of the City of Chicago, State of Illinois, \_\_\_\_\_

\_\_\_\_\_

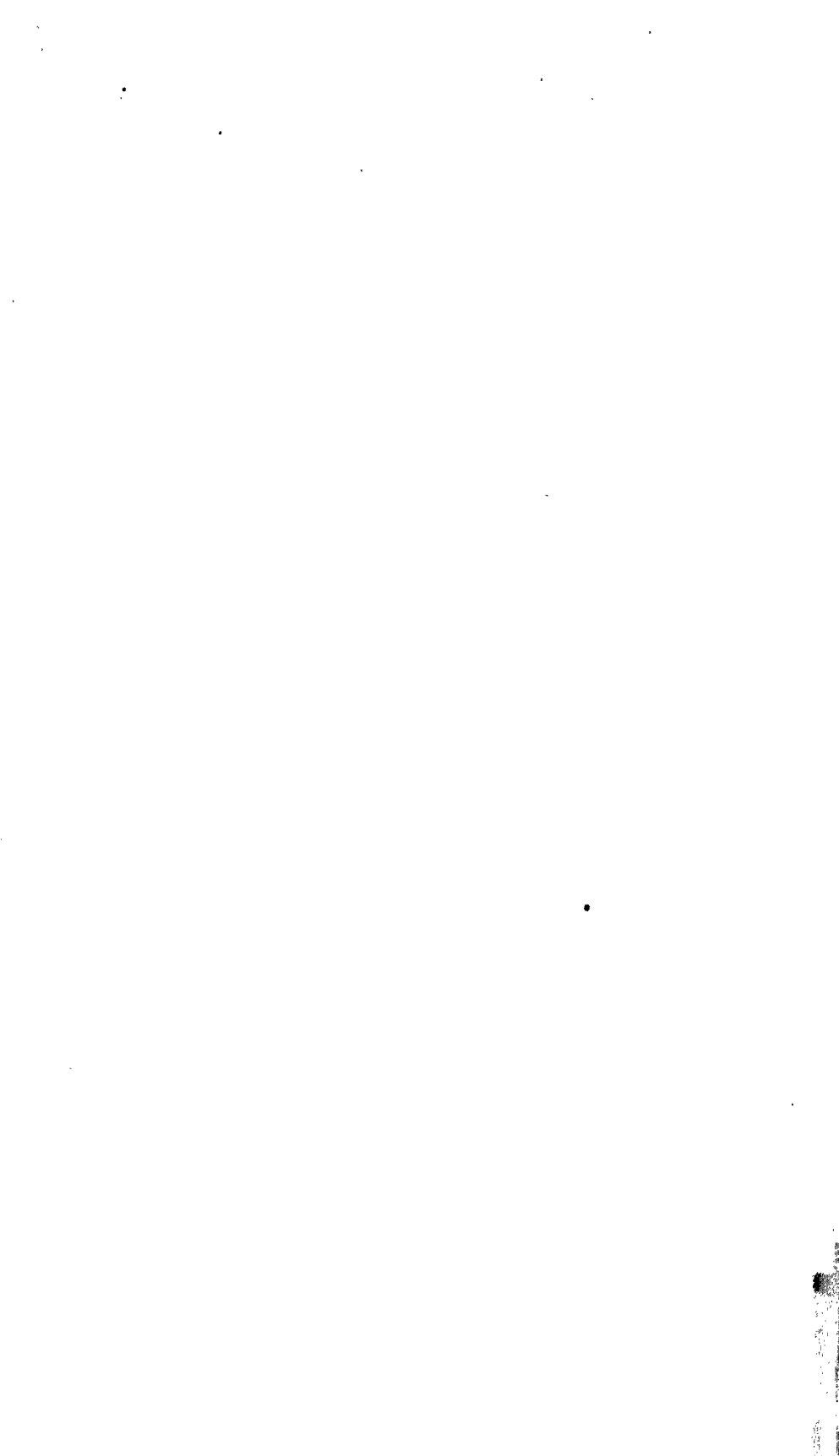
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*Cash contributions made within the taxable year to Field Museum of Natural History to an amount not in excess of 15 per cent of the taxpayer's net income are allowable as deductions in computing net income under Article 251 of Regulation 69 relating to the income tax under the Revenue Act of 1926.*

*Endowments may be made to the Museum with the provision that an annuity be paid to the patron during his or her lifetime. These annuities are tax-free and are guaranteed against fluctuation in amount.*



## CONTENTS

---

Board of Trustees .....	180
Officers and Committees .....	181
Staff of Museum .....	182
Report of the Director .....	185
Lectures and Entertainments .....	197
The James Nelson and Anna Louise Raymond Public School and Children's Lectures .....	201
Publications .....	204
Library .....	205
Expeditions .....	208
Accessions .....	233
Cataloguing, Inventorying and Labeling .....	253
Installations, Rearrangements and Permanent Improvements.....	257
The N. W. Harris Public School Extension .....	283
Art Research Classes .....	284
Division of Public Relations .....	285
Division of Printing .....	288
Divisions of Photography, Roentgenology and Illustration.....	290
Division of Memberships .....	291
Attendance Statistics .....	293
Financial Statements .....	294
List of Accessions .....	296
Department of Anthropology.....	296
Department of Botany.....	299
Department of Geology .....	301
Department of Zoology.....	304
Raymond Division.....	307
Division of Photography.....	307
The Library .....	308
Articles of Incorporation .....	320
Amended By-Laws .....	322
List of Benefactors, Honorary Members, and Patrons .....	327
List of Corporate Members .....	328
List of Life Members .....	329
List of Associate Members .....	332
List of Sustaining Members.....	347
List of Annual Members .....	351

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CARL NEUBERTH, *Custodian of Herbarium*

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SHARAT K. ROY, *Assistant Curator of Invertebrate Paleontology*

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R. MAGOON BARNES, <i>Oology</i>	EDMOND N. GUERET, <i>Osteology</i>
*ALFRED M. BAILEY, <i>Assistant</i>	COLIN C. SANBORN, <i>Assistant</i>

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L. L. PRAY, <i>Fishes</i>	LEON L. WALTERS, <i>Reptiles</i>
ARTHUR G. RUECKERT, <i>Mammals</i>	ASHLEY HINE, <i>Birds</i>

\*RESIGNED

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A. B. WOLCOTT, *Assistant Curator*

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## CHIEF ENGINEER

W. H. CORNING

WILLIAM E. LAKE, *Assistant Engineer*

\*RESIGNED





## ANNUAL REPORT OF THE DIRECTOR

1927

To the Trustees of Field Museum of Natural History:

I have the honor to present a report of the operations of the Museum for the year ending December 31, 1927.

In reviewing the history of this year, three things stand out prominently which alone would make it especially noteworthy in the annals of the Institution. They are: first, the year's attendance exceeded 1,000,000, outstripping all previous years; second, extensive structural changes were made which added fourteen halls to the space available for exhibits; and third, through the activities of sixteen expeditions, and through the continued expansion of intramural research, publications, and dissemination of knowledge by exhibits and other means, the Museum has again made a great contribution to the causes of science and education.

The number of persons who visited the Museum in 1927 was 1,043,546. This exceeds the attendance of 1926, the next largest, by 112,975. As there were only one or two especially important events at Soldier Field or in Grant Park during the year to attract crowds into the vicinity of the Museum, this large and gratifying gain in attendance can rightfully be assigned to the constantly increasing interest of the public in the Museum itself. In the six years and eight months since the Museum has been in its present building it has received a total of 4,740,877 visitors. This is more than the total number for 22 years in its former building in Jackson Park.

The structural changes, above mentioned, were undertaken to gain additional exhibition area which was greatly needed for anthropological and zoological material which either has already been acquired or is to be acquired in the future. This reconstruction was a vast undertaking, and the large expense involved was met by contributions made by President Stanley Field.

Details of the work of the sixteen Field Museum expeditions in the field during the year will be found in the various departmental sections of this Report. A brief summary is given herewith:

The Second Rawson-MacMillan Subarctic Expedition set out in June for fifteen months in Labrador and Baffin Land, to

make explorations, collect anthropological, botanical, geological, and zoological material, conduct scientific researches, and make topographical studies. The expedition is financed by Mr. Frederick H. Rawson, and led by Lieutenant-Commander Donald B. MacMillan. A fleet of three vessels, Commander MacMillan's flagship "Bowdoin," the schooner "Radio," and the power boat "See-Ko," is engaged in the work. The expedition has established a scientific station near Nain, in Labrador. Dr. William D. Strong, Mr. Sharat K. Roy, Mr. Alfred C. Weed, and Mr. Arthur G. Rueckert are members of the Museum staff on this expedition.

The Field Museum-Chicago Daily News Abyssinian Expedition returned in May after more than eight months in Abyssinia, during which 3,500 mammals, birds, fishes and reptiles, many of them rare species, were collected. The Chicago Daily News financed this expedition. Curator Wilfred H. Osgood was leader. Others in the personnel were Mr. C. Suydam Cutting, Mr. James Baum, Mr. Alfred M. Bailey, and the late Louis Agassiz Fuertes, noted artist and ornithologist who, it is regretfully recorded, was killed in an automobile accident shortly after returning to this country.

The Borden-Field Museum Alaska-Arctic Expedition, sponsored and led by Mr. John Borden, on his yacht, the "Northern Light," obtained a representative collection of land and sea mammals of Alaska and neighboring islands, many birds of the region, and a collection of ethnological material. Members of the party, besides Mr. Borden, included Mrs. Borden, Mr. and Mrs. R. B. Slaughter, Mr. and Mrs. C. B. Goodspeed, Miss Frances Ames, Miss Edith Cummings, and Taxidermist Ashley Hine of the Museum staff.

The Field Museum-Oxford University Joint Expedition to Mesopotamia, of which Captain Marshall Field is sponsor for the Museum's share, resumed its operations, carried on during four previous seasons. The 1927 season was its most successful one thus far. This expedition will continue its work in 1928.

Ten other expeditions were sponsored by Captain Marshall Field. These included the Anthropological Expedition to Madagascar, in charge of Assistant Curator Ralph Linton, which concluded its two years' activities, obtaining some 4,500 ethnological specimens for the Museum, and information of unusual importance to the scientific world; the South American Zoological Expedition, begun in 1926, and concluded in 1927 with the return of Mr. Colin C. Sanborn of the Museum staff, last of its members to remain in the field; the Paleontological Expedition to Argentina and Bolivia, headed

by Associate Curator Elmer S. Riggs, which obtained a remarkable collection of mammal fossils; an anthropological expedition in Europe and Asia to collect material for use in the proposed Hall of Prehistoric Man, in charge of Assistant Curator Henry Field; a zoological expedition in India, in charge of Colonel J. C. Faunthorpe of Bombay; a botanical expedition in South America in charge of Dr. A. Weberbauer of Lima, Peru; an expedition in British Honduras to conduct ethnological and archaeological researches in connection with Maya civilization, in charge of Assistant Curator J. Eric Thompson; a geological expedition in Maine conducted by Curator Oliver C. Farrington; a geological expedition in Newfoundland under the leadership of Assistant Curator Sharat K. Roy; and a joint expedition of Yale University School of Forestry, the New York Botanical Gardens, the United Fruit Company, and Field Museum to collect botanical specimens in Costa Rica.

The Conover-Everard Expedition to Tanganyika Territory, Africa, returned in June after more than a year's work during which approximately 600 mammals, 1,500 birds, and 300 reptiles were collected. This expedition was financed and actively participated in by Mr. Boardman Conover, Associate in Ornithology, and Mr. Robert Everard of Detroit. Assistant Curator John T. Zimmer was also a member of the party.

The Alexander H. Revell-Field Museum Expedition to Alaska during the summer obtained several specimens of Kodiak Bear. The expedition was, in the main, financed by Mr. Alexander H. Revell.

The Museum was the recipient of many benefactions during the year. Mr. Frederick H. Rawson made a gift of \$19,000 to cover the deficit in the budget for the year 1927. Mr. Rawson also contributed \$30,000 for the Second Rawson-MacMillan Subarctic Expedition of Field Museum.

President Field made contributions during the year which totaled \$274,147. These included \$16,654 for the year's operating expenses of the Stanley Field Plant Reproduction Laboratories; \$68,541 toward the building deficit fund, and \$188,952 to cover the cost of structural changes described in this Report.

Captain Marshall Field, in addition to his annual contribution of \$100,000, gave \$10,000 for the continuation of the Museum's zoological expedition in South America.

Mrs. Anna Louise Raymond supplemented her \$500,000 endowment of the James Nelson and Anna Louise Raymond Public School

and Children's Lecture Division by a special gift of \$10,000 for 1927, and a gift of \$7,000 for 1927 operating expenses of the Division, the latter of which is the first of a series of annual contributions.

A legacy of \$25,000 from the late George F. Porter, and one of \$2,000 from the late Arthur B. Jones, were bequeathed to the Museum. Prior to his death, the late Edward E. Ayer contributed \$3,123 for the purchase of books and articles of pewter for addition to the Ayer Ornithological Library and the Ayer Pewter Collection.

A trust fund of \$30,000 was established by Mr. and Mrs. William J. Chalmers to assure the continued growth of the William J. Chalmers Crystal Collection, to promote its scientific study and description, and to make possible publication of the results of these researches. This trust fund will be known as the William J. and Joan A. Chalmers Trust Fund. A further contribution was made by Mr. Chalmers for the purchase of specimens of additional crystals for the collection bearing his name, and he added 63 specimens of rare minerals and gems to the systematic mineral collection.

Mr. Ernest R. Graham made a further contribution of \$25,000, representing his annual gift to the Museum. This donation will be devoted toward the completion of Ernest R. Graham Hall of Historical Geology.

A contract was entered into during the year with Mr. Frederick Blaschke of Cold Spring-on-Hudson, New York, for the execution and delivery of three groups representing restorations of fossil animals and their environments, for installation in Ernest R. Graham Hall of Historical Geology.

A contribution of \$20,000 was received from Mrs. Stanley Field as the first installment on a fund she is creating for the purchase and installation in the Museum of a pipe organ. The organ will be used in giving Sunday organ recitals in the Museum, and for special occasions.

Mr. and Mrs. Martin A. Ryerson contributed \$12,000 toward the Stanley Field Museum Employees' Pension Fund.

The American Friends of China contributed \$555 as their annual gift for the development of the Chinese section of the anthropological collections.

Mr. Alexander H. Revell contributed \$5,000, and Mr. Sewell L. Avery \$500, toward the expense of the Alexander H. Revell-Field Museum Expedition to Alaska.

The Illinois Chapter of the Wild Flower Preservation Society of America contributed \$500 for the maintenance during the spring, summer and autumn months of an exhibit of living wild flowers of the Chicago region in Stanley Field Hall. They have kindly agreed to make an annual contribution for this purpose.

The sum of \$51,348 was received from the Estate of the late John G. Shedd as payment in full for the Shedd Aquarium's share of the cost of the changes in the Museum's heating system necessary for the heating of the Aquarium from the Museum's plant.

The South Park Commissioners turned over to the Museum \$192,582 derived from the tax levy authorized for this purpose by the State Legislature.

Under the Stanley Field Museum Employees' Pension Fund a plan was put into effect whereby a supplementary \$1,000 life insurance is made available to each employe, in addition to the life insurance previously provided for employes.

Mr. C. Suydam Cutting of New York, who was a member of the Field Museum-Chicago Daily News Abyssinian Expedition, purchased for \$4,500 and presented to the Museum a collection of the last paintings of birds and other animals made by the late Louis Agassiz Fuertes. The paintings, 108 in number, were made on the Abyssinian Expedition by Mr. Fuertes, and are pronounced to be the best work of his lifetime, during which he had achieved the distinction of being generally conceded as America's foremost painter of birds. Mr. Cutting presented the Museum also with eight reels of motion pictures which he himself had taken while in the field with the Abyssinian Expedition.

Many other gifts were made to the Museum during the year by its hosts of generous friends. Notable among these was a collection of beautiful and valuable Chinese money belts embroidered with glass beads in intricate designs, presented by Mrs. George T. Smith.

Another important gift in the Department of Anthropology is an excellent collection of Eskimo ethnological material which Mr. John Borden gathered while leading the Borden-Field Museum Alaska-Arctic Expedition.

The Department of Botany received a gift of 650 Central American herbarium specimens from Professor Samuel J. Record; another of 3,039 United States plants from Dr. E. E. Sherff; 3,019 herbarium specimens by exchange from the United States National Museum, and 334 herbarium specimens from the Royal Botanic Gardens, Kew, England.

An unusually well preserved and complete skull and lower jaws, with tusks, of a young male mastodon from northern Indiana, was a notable addition of the year to the specimens representing these extinct animals in the Department of Geology.

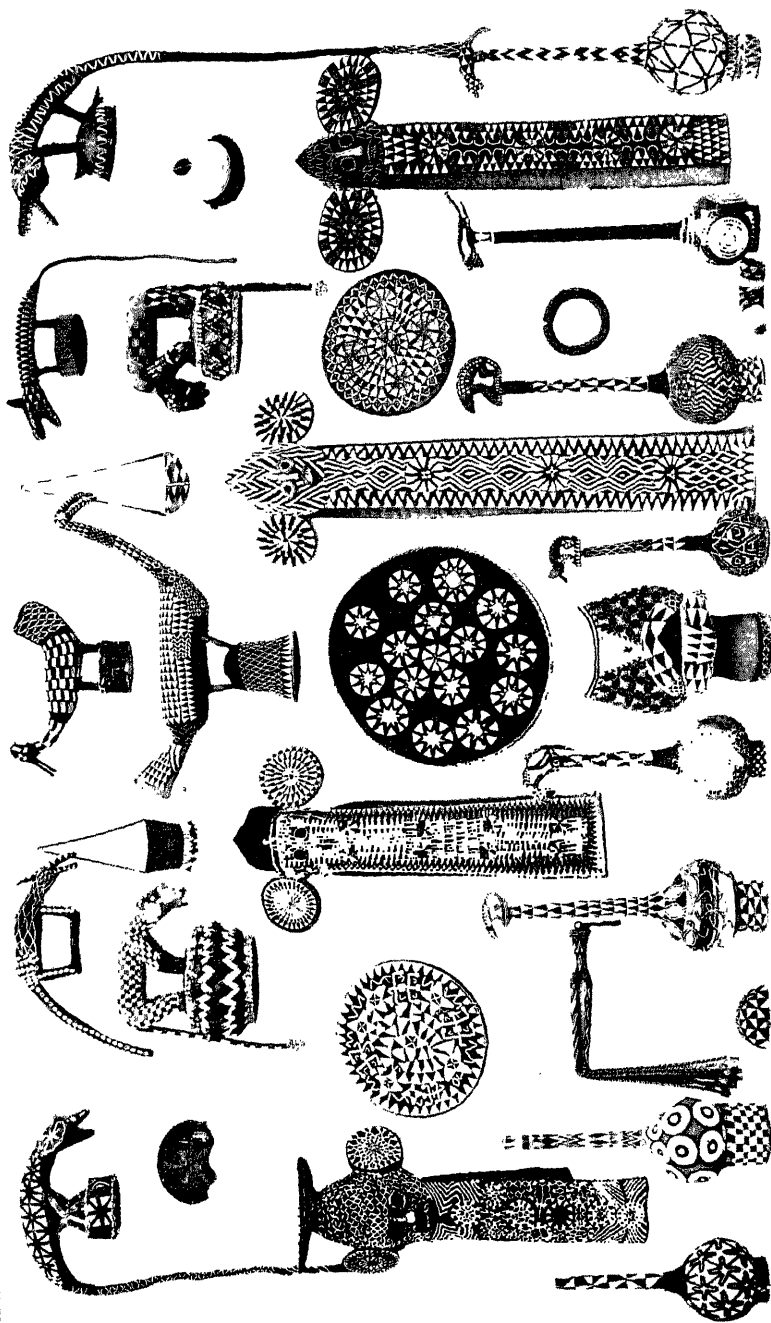
A collection of more than 250 fossil plants of the Coal Period, about 300,000,000 years old, was received by exchange from the National Museum, Washington, D. C. These will be of great value in making restorations of the flora of that period.

Outstanding among the accessions of the Department of Zoology are specimens of Mountain Nyala, Abyssinian Ibex, Abyssinian Red Wolf, Gelada Baboon, Grevy's Zebra, Defassa Waterbuck and Northern Roan Antelope, which are included in the 3,500 specimens obtained by the Field Museum-Chicago Daily News Abyssinian Expedition; the skin and skeleton of the rare White Rhinoceros, an animal believed to be on the verge of extinction, obtained by the Conover-Everard Expedition to Tanganyika Territory; and several especially fine examples of Alaska Brown Bear obtained by the Borden-Field Museum Alaska-Arctic Expedition, which fulfill an immediate need for the Hall of American Mammal Habitat Groups. Mr. John Wentworth of Chicago presented a fine Black Rhinoceros skin from Tanganyika Territory, Africa, which will make an exhibit of extreme interest. A gift of an important collection of specimens of rare game animals of Abyssinia was received from Mr. Harold A. White.

One of the Museum's notable purchases during the year was the Cap Blanc skeleton of a youth who lived in southwestern France about 25,000 years ago. This is the only complete skeleton of a European prehistoric man of that period in any museum in the United States.

During the year the Museum purchased a Lanston monotype keyboard with a caster equipment, and a folding machine, for the Division of Printing. These machines enable the Division to handle a greater amount of work with increased efficiency.

The Museum suffered a serious loss during the year by the deaths of two of its Trustees, Mr. Arthur B. Jones and Mr. Edward E. Ayer. Both of these men had been connected with the Museum from its earliest days, and each of them had contributed generously to its collections and given much of their time and effort to the promotion of the Institution's progress. The Arthur B. Jones Collection of ethnological material from the Malay Peninsula and Malay Archipelago stands as a permanent testimonial of the unflagging interest shown in the Museum by Mr. Jones. Likewise, the Edward



BEADWORK FROM TRIBES OF CAMEROON, WEST AFRICA

Example of installation on screen in new African Hall (Hall D)

One-twentieth actual size





E. Ayer Pewter Collection, the Edward E. Ayer Ornithological Library which stands among the foremost in its field, and the many contributions of valuable objects and collections made by Mr. Ayer, to the Department of Anthropology particularly, but to the other Departments of the Museum as well, constitute a memorial to him. They remain as evidence of the enthusiasm he devoted to the task of helping to develop the Museum to give the greatest public service, and take its rank among the world's leading institutions of its kind.

Mr. Jones, who had been a Trustee of the Museum since 1894, died on February 21, 1927. He was also an Honorary Member, a Corporate Member, and a Life Member. The following tribute in the form of a resolution by the Board of Trustees was paid to his memory:

"The death of Mr. Arthur B. Jones having been announced at the monthly meeting of the Board of Trustees of Field Museum of Natural History, held March 14, 1927, the following resolution was adopted as a Testimonial of his services in behalf of the Institution:

"With profound regret the Trustees of Field Museum of Natural History have learned of the decease of their fellow Trustee, Arthur B. Jones.

"Mr. Jones served as a member of the Board of Trustees with great fidelity and ability, his interest in the Museum dating from the very beginning of the Institution, and continuing until his demise.

"Accepting, at the organization of the Board, appointment as a member of the Auditing Committee, he remained on this Committee during his long association with the Museum and carried on its exacting duties with unceasing devotion. Although it involved, especially in earlier years, a considerable sacrifice of time, he later assumed additional responsibility as a Member of the Finance Committee. To all questions of importance affecting the welfare and interest of the Museum, he gave unstinted and assiduous attention, and always sought to promote the progress of the Institution along beneficent lines.

"His unselfish labors and generous contributions on behalf of the Museum have been wrought into the development of the Institution and will bear fruit for years to come.

"The members of the Board of Trustees desire to extend to his bereaved widow and family the assurance of their deepest sympathy."

Mr. Ayer, it will be remembered, was the first President of the Museum, serving in that capacity from 1893 to 1899, and serving as a Trustee from the time of the Institution's establishment until his death. He was also a Benefactor, an Honorary Member, a Corporate Member and a Life Member. He died on May 3, 1927. In tribute to his memory the Board of Trustees adopted the following resolution:

"The death of Mr. Edward Everett Ayer on May 3, 1927, at Pasadena, California, in his eighty-sixth year, removed from the closer circle of Field Museum of Natural History one of its most sincere friends and devoted supporters.

"Mr. Ayer gave generous and effective assistance in the initial organization of the Museum. He was in the fullest accord with its purpose, and contributed to its progress an ever wakeful enthusiasm which counted far in the councils of the Trustees, and became reflected in a large number of his contemporaries. For five years, from 1894 to 1899, Mr. Ayer served the Institution as its first President, and it fell to his share to formulate and pronounce many of the fundamental principles which originated with its founders. Continuing his service as a member of the Board of Trustees throughout the remainder of his life, Mr. Ayer gave liberally of his time and efforts to strengthen and develop the Museum in every way. His participation in its active management was dictated by his strong faith in the great future of Chicago as an educational center and in the importance of organized museum activities as an integral part of this development. This conviction prompted Mr. Ayer in contributing time and again large collections and groups of important objects, some of which served in the upbuilding of several unrivalled units in the Library, others in extending materially the organized collections in other fields. From year to year his contributions, chiefly of anthropological interest, continued, and all departments of the Museum give some evidence of his zeal as a collector.

"Mr. Ayer was notably successful in enlisting the aid of others in an effort to extend and supplement the collections, and in this way adduced much material which otherwise might have been lost to the Institution. His enthusiasm inspired many of his contemporaries to follow his example in this public service.

"The most important gifts made either wholly or in part by Mr. Ayer include several thousand specimens illustrating the archaeology and ethnology of the North American Indians, large Egyptian collections, valuable antiquities illustrating Greek, Roman and

Etruscan archaeology, an important collection of fossil vertebrates from the Rancho La Brea beds of California, and, in his later years, a large and exhaustive collection illustrating the history and uses of pewter in all parts of the world. He also made many contributions to the gem exhibits in H. N. Higinbotham Hall.

"The Museum Library benefited in many ways by Mr. Ayer's contributions, but his chief service consisted in building up by his donations exceptionally complete collections of books and manuscripts on the subjects of ornithology and ichthyology, including numerous works of superior excellence and rarity, which, as a whole, would be a notable attraction in any institution.

"Mr. Ayer's personal character expressed itself in an alert interest in even the minutest details of the Museum, from its personnel to the administrative details. He confessed himself in a privileged position as a member of the Board of Trustees. His sympathies included the care of the collections as well as the welfare of every employe. He remained in close personal contact with the members of the Museum staff and inspired all with his generous, intelligent response to earnest work, his high ideals, his reverence of true service and his confidence in that form of public enlightenment which remains the cultural foundation of Field Museum."

Mr. Frederick H. Rawson was elected as a Trustee to fill the vacancy caused by Mr. Ayer's death. Mr. William H. Mitchell was also elected during the year as a Corporate Member, and as a Trustee to fill the vacancy caused by Mr. Jones' death.

In July the Museum's Hall of African Mammals was dedicated as Carl E. Akeley Memorial Hall in honor of the late Carl E. Akeley, noted explorer, sculptor, taxidermist and inventor, many of whose masterpieces both of taxidermy and sculpture are in Field Museum. Mr. Akeley, who was chief taxidermist of the Museum from 1895 to 1909, died on November 17, 1926, two days after his election as a Patron.

In recognition of the eminent service they have rendered the Museum, Mrs. George T. Smith and Mrs. John J. Borland were elected Patrons of the Institution.

The following were elected Life Members: Mr. Frederick Wesley Sargent, Judge Elbert H. Gary (who, it is recorded with regret, has since died), Mrs. Arthur B. Jones, Mr. F. D. Corley, Mr. Edward A. Cudahy, Jr., Mr. Britton I. Budd, Mr. William G. Burt, Mrs. Mason Bross, Mr. James Otis Hinkley, Mr. Paul E. Gardner, Mr. William B. McIlvaine, Mrs. Waller Borden, Mr.

Reuben G. Chandler, Mr. Earle H. Reynolds, Mr. George Lytton, Mr. William N. Jarnagin, Mr. James D. Cunningham, Mr. Ronald L. F. Tree, Mr. George W. Dixon, Mr. J. Dorr Bradley, Mr. John Stuart, Mr. Wallace De Wolf, and Miss Gwethalyn Jones.

Mr. Arthur S. Vernay was elected as a non-resident Life Member.

In other classes of membership, a total of 1,253 was added to the Museum's lists.

The area gained by the reconstruction previously mentioned is confined to the ground floor, and it is adaptable to attractive and comprehensive arrangements of exhibits. To accomplish this expansion of exhibition space it was necessary to remove and reroute some twenty long pipe lines which had formerly run along the ceilings, exposed to view. This involved the installation on the third floor of three ten-inch steam pipes, also cold water, hot water and circulating pipes, and of gas and compressed air lines. In doing this work no walls were broken, and there was no interference with the exhibition halls on the main and second floors. Approximately 3,800 feet of trenches were dug under the ground floor for the drip pipes, which now lead to a new pump room which was excavated fourteen feet below the southwest corner of the Museum. In these trenches are also pipes for high pressure water for fire protection, hot and cold water, gas and compressed air. A tunnel fully 1,000 feet long was built from the new pump room to the northeast corner of the Museum, in which steam feed and return heating pipes for the Shedd Aquarium were installed, together with the Museum's piping. There were 51,700 feet, or nearly ten miles of pipes laid in the course of this work. More than 200 tons of old piping were removed and sold. Eleven of the new ground floor halls gained by these changes will be used for anthropological and three for zoological exhibits. Structural changes, noticeable only from the inside, were made also in Ernest R. Graham Hall of Historical Geology. The 72 windows in this hall were blocked out, those on the north, west and south being insulated with celotex, and those on the east being bricked up. This was done to exclude daylight, and make possible the installation of a system of artificial lighting better suited to the proper display of the material exhibited in the hall. The windows along the west wall of the Hall of Plant Life (Hall 29) have also been bricked up for similar reasons. Sixty-six skylights were covered with insulating panels and rubberoid. The skylight over the first floor was covered with a heavy coat of malleable asphalt.





AN AERIAL GARDEN

A community of parasitic and epiphytic plants with a termite nest from a Guiana tree-top

Temporarily installed in Stanley Field Hall

Reproduced from nature

Stanley Field Guiana Expedition, 1922

One-ninth natural size

Two iron hand railings leading up the steps to the north entrance of the Museum were installed.

The work of remodeling Egyptian Hall was begun during the year. This consists in the main of the construction of a case as a part of the north and east walls for a length of 194 feet. This type of case, an entirely new departure from usual museum methods, will permit the grouping of mummies, their cases, mummy cloths and other mortuary objects. An effective lighting system will be arranged for this and the other cases in the hall.

Several important new installations and reinstallations were undertaken during the year. The economic collections of food plants, and of woods, in the Department of Botany, are undergoing a process of reinstallation, which includes addition of new specimens, and relabeling, which will increase their interest and value.

In the Department of Zoology, two new habitat groups of mammals, one of the Wapiti, or American Elk, from the Olympic Mountains of Washington, and the other of Mule Deer from the Kaibab Forest of Arizona, were installed in the Hall of American Mammal Habitat Groups. The Mule Deer specimens were obtained by a Captain Marshall Field expedition in 1926. The taxidermy on the American Elk group was the work of Taxidermist Julius Friesser; that on the Mule Deer was done by Taxidermist C. J. Albrecht, who also, as a member of the expedition, procured the animals. The scenic backgrounds of both cases were painted by Staff Artist C. A. Corwin, who also painted backgrounds for the Ovis Poli, Ibex, Glacier Bear, and Sea Lion groups now in course of construction or installation. The Grizzly Bear, Antelope and Moose cases in the Hall of American Mammal Habitat Groups were reinstalled, and all groups in this hall were furnished with new backgrounds.

The Department of Zoology also placed on exhibition a reproduction of a hippopotamus, now installed in Stanley Field Hall. This is said to be the first life-like preparation of a hippopotamus ever shown in any museum. The reproduction is made of a cellulose-acetate compound, by a special process invented by Mr. Leon L. Walters of the Museum's taxidermy staff, who has by the same process reproduced snakes, crocodiles, and other animals which readily lend themselves to this treatment. The hippopotamus specimen from which the reproduction was made was a gift to the Museum of the Cincinnati Zoological Park Association.

The former Edward E. Ayer Hall of Roman Antiquities was renamed Edward E. and Emma B. Ayer Hall.



All educational activities of the Museum were continued, on a larger scale than in previous years. The usual courses of illustrated lectures on science and travel, by noted travelers and explorers, were given, with a gratifying response on the part of the public, so great, in fact, that notwithstanding the fact that there are 1,124 seats in the James Simpson Theatre, its capacity was often exceeded by the number of persons seeking admission. The work conducted by the Museum among school children was increased. This includes the circulation of about 1,000 traveling exhibits of natural history and economic subjects among the schools of Chicago by the N. W. Harris Public School Extension of the Museum; and also the extension lectures given in the schools, and the moving pictures of natural history and economic subjects given for the children in the James Simpson Theatre, both of the latter activities under the auspices of the James Nelson and Anna Louise Raymond Public School and Children's Lecture Division.

The giving of Sunday concerts in the James Simpson Theatre, inaugurated in 1926, was continued in 1927. Two series of concerts were given in the past year, one series of six under the auspices of the Elizabeth Sprague Coolidge Foundation of the Library of Congress, and one series of three presented by the Chicago Chamber Music Society. These continued to be extremely popular, drawing large attendance.

The Library of the Museum, which now contains approximately 92,500 books and pamphlets on scientific subjects, was used by a greater number of persons in 1927 than in any previous year.

The following additions to the scientific staff were made during 1927: Dr. William M. McGovern was appointed Assistant Curator of South American and Mexican Ethnology; Mr. J. Eric Thompson was reappointed to the staff as Assistant Curator of Mexican and Maya Archaeology; Dr. T. George Allen was appointed Assistant Curator of Egyptian Archaeology; Dr. Paul C. Standley from the herbarium of the United States National Museum was appointed Associate Curator of Field Museum Herbarium, and Professor Samuel J. Record of Yale University School of Forestry was appointed Research Associate in Wood Technology.

Mr. H. B. Harte was placed in charge of the Division of Public Relations, which was reorganized during the year.

Mr. Edmund Vance Cooke, Jr., was employed as a Guide Lecturer.

Two members of the scientific staff resigned during the year: Mr. Edmund Heller and Mr. Alfred M. Bailey, both of whom had been Assistant Curators in the Department of Zoology.

Mrs. Dorothy R. Cockrell, who is in charge of the James Nelson and Anna Louise Raymond Public School and Children's Lecture Division, visited European museums and schools during the summer, in order to study their activities and the relationship existing between them.

This opportunity is taken to extend grateful acknowledgement to the various transportation companies for displaying posters and placards advertising the Museum and for distributing nearly 190,000 Museum direction folders; to the Clyde W. Riley Advertising System for allotting space to the Museum in the programs of Chicago theatres, and to the Chicago Civic Opera Company for similar courtesy in its programs; to the many business firms, trade organizations and civic associations which have cooperated with the Museum in drawing the attention of the public to the Institution; and to the newspapers of Chicago and the press of the country as a whole for the generous space given in their columns to publishing news of Museum activities.

### LECTURES AND ENTERTAINMENTS

GENERAL LECTURES.—The Forty-seventh and Forty-eighth Free Lecture Courses of Field Museum of Natural History were given in the James Simpson Theatre on Saturday afternoons during the spring and autumn months. These lectures were illustrated by motion pictures and stereopticon slides. The Museum takes this occasion to thank the scientists and explorers whose participation made these courses successful. Following are the programs of both courses:

March 5—"Java."

Mr. H. C. Ostrander, Yonkers, New York.

March 12—"The Mystery of Mount Everest."

Mr. N. E. Odell, F. G. S., London; member of the climbing party of the Royal Geographic Society's Mount Everest Expedition of 1924.

March 19—"Birds and Animals of Alaska."

Mr. William L. Finley, Director of Wild Life Conservation, State of Oregon.

March 26—"Wild Life of the Pacific Northwest."

Mr. C. J. Albrecht, Field Museum.

- April 2—"Prehistoric Animal Life," including sketches for the mural decorations of the Ernest R. Graham Hall of Paleontology.  
Mr. Charles R. Knight, New York.
- April 9—"Birds of the Chicago Area."  
Dr. Lucius C. Pardee, Chicago.
- April 16—"Life Beyond the Arctic Circle."  
Commander Donald B. MacMillan, Leader of the Rawson-MacMillan Subarctic Expedition of Field Museum, 1926.
- April 23—"Native Races of Africa."  
Mr. W. D. Hambly, Member of the Wellcome Expedition to the Sudan; Assistant Curator of African Ethnology, Field Museum.
- April 30—"The Hunting Tribes of North America."  
Dr. William D. Strong, Assistant Curator of North American Ethnology and Archaeology, Field Museum.
- October 1—"The First People of America."  
Professor Arthur Sterry Coggeshall, Carnegie Museum, Pittsburgh.
- October 8—"Burma."  
Mr. Barnum Brown, American Museum of Natural History, New York.
- October 15—"The Archaeological Investigations of the Carnegie Institution of Washington at Chichen Itza, Yucatan and Uaxactun, Guatemala, in 1927."  
Dr. Sylvanus G. Morley, Carnegie Institution, Washington, D. C.
- October 22—"Natural Wonders of American Deserts."  
Mr. Frederick Monsen, Pasadena, California.
- October 29—"A Day in Babylonia."  
Professor A. T. Olmstead, University of Illinois.
- November 5—"The Depths of the Sea."  
Dr. Raymond L. Ditmars, Curator, New York Zoological Park.
- November 12—"The Captain Marshall Field Brazilian Expedition of 1926."  
George K. Cherrie, Leader of the Expedition.

- November 19—"Explorations at the North Pole of the Winds."  
Professor William H. Hobbs, Leader of the University  
of Michigan Greenland Expedition.
- November 26—"Sun Dance of the Blackfoot Indians."  
Mr. Walter McClintock, Pittsburgh.
- December 3—"The Wonders of Marine Life."  
Dr. William Beebe, Director of Tropical Research, New  
York Zoological Society.

The total attendance at these nineteen lectures was 30,210, which is an increase of 7,397 over the attendance of last year.

In addition to the regular spring and autumn courses, the following special lectures were delivered during the year:

- January 8—"The Hawaiian Islands."  
Mr. F. P. Clatworthy.
- January 23—"Racing with Death in Antarctic Blizzards."  
Sir Douglas Mawson.
- February 27—"To Lhasa in Disguise."  
Dr. William M. McGovern.
- March 6—"Man-eaters of Tsavo and other Lion Adventures."  
Colonel J. H. Patterson.
- May 7—"The Dragon Lizards of Komodo."  
Motion pictures taken by the Douglas Burden Expedition  
of the American Museum of Natural History, intro-  
duced by Mr. Karl P. Schmidt, Assistant Curator of  
Reptiles and Amphibians, Field Museum.
- May 8—"The Dragon Lizards of Komodo" (repeated).
- May 14—"Racing with Death in Antarctic Blizzards."  
Motion pictures taken by Sir Douglas Mawson.
- November 6—"The Depths of the Sea."  
Dr. Raymond L. Ditmars, Curator, New York Zoological  
Park.
- November 13—"The Captain Marshall Field Brazilian Expedition  
of 1926."  
Mr. George K. Cherrie, Leader of the Expedition.
- November 20—"Abyssinia."  
The Chicago Daily News Expedition of Field Museum.  
Dr. Wilfred H. Osgood, Curator of Zoology, Field  
Museum; Leader of the Expedition.

December 4—"Beneath Tropic Seas."

Dr. William Beebe, Director of Tropical Research, New York Zoological Society.

December 11—"Adventures, Archaeological and Otherwise in Arabia, Egypt, the Sudan, Sinai, Transjordan, Palestine and Syria."

Mr. Lowell Thomas, author and traveler.

The total attendance at these special lectures was 14,553.

CONCERTS.—During the late winter and spring, a series of chamber music concerts was given by the Gordon String Quartet in the James Simpson Theatre. These concerts were sponsored by the Elizabeth Sprague Coolidge Foundation of the Library of Congress, and the Chicago Chamber Music Society. They were given on January 16, February 20, March 20 and 27, April 3, 10, 17 and 24, and May 1, and the attendance totaled 6,090, being an increase of 1,685 over last years' attendance.

### EDUCATIONAL MEETINGS

An increasing number of groups of teachers and scientific societies have made use of the James Simpson Theatre and the Lecture Hall for educational meetings under auspices other than those of the Museum. Of particular interest in 1927 were the series of meetings of teachers addressed by Dr. Alfred Adler, eminent lecturer on child psychology. The annual meetings of the American Anthropological Association were held in the small lecture hall; and on several occasions special programs were arranged for Americanization classes from the public schools. In all, there were seventeen such groups, with an attendance of 5,748.

### RADIO TALKS

During the year the following radio talks were given by members of the Museum staff from the Chicago Daily News Station, WMAQ:

March 2—"Life of the Ocean."

Miss Margaret Cornell, Raymond Division.

June 25—"Abyssinia."

Dr. Wilfred H. Osgood, Curator of Zoology.

September 25—"Roman Home Life."

Miss Margaret Cornell, Raymond Division.

On November 15 and five subsequent Tuesdays talks were given over the Chicago Tribune Station, WGN. These were broadcast by Miss Cornell, who described the founding of the Museum, the acquisition and installation of specimens, the character of the collections, and the various educational activities of the Institution.

### LECTURE TOURS FOR ADULTS

As in previous years, the services of Museum guide-lecturers were offered without charge to clubs, conventions and other organizations. These groups were conducted on lecture tours planned with regard to group interests. Other lecture tours, open to the general public, were given at 11 a. m. and 3 p. m. on Mondays, Tuesdays, Wednesdays and Fridays. During most of the year these lectures were on a weekly basis—each group of eight tours forming a unit which was repeated every week. Beginning the first of December, it was decided to change this system by adding Thursdays to the days on which tours are conducted and arranging a new program each month. For adults 290 lecture tours were given during the year, the total attendance being 9,528.

### THE JAMES NELSON AND ANNA LOUISE RAYMOND PUBLIC SCHOOL AND CHILDREN'S LECTURES

ENTERTAINMENTS FOR CHILDREN.—In the spring and autumn of 1927, courses of entertainments for children were offered in the James Simpson Theatre under the provisions of the James Nelson and Anna Louise Raymond Public School and Children's Lecture Fund. Each entertainment was given twice. With the addition of entertainments given on holidays, these entertainments numbered 22, with an attendance of 42,676 children. The programs were as follows:

#### SPRING COURSE

March 5—"Animals Large and Small of the Northwest."

Motion pictures and lecture.

Mr. C. J. Albrecht, Field Museum.

March 12—"Cuba, Island of Sugar."

"Despoilers of the Jungle."

"The Jungle Sluggard."

"Capturing a Giant Anteater."

- March 19—"The World of Paper."  
           "Motherhood in Nature."  
           "Marauders of the High Seas."  
           "Zoo's Zoo in America."
- March 26—"Sugar Trails (Beet Sugar)."  
           "The Story of Wool."  
           "Mysteries of Snow."  
           "Rare Specimens in the New York Zoo."  
           "Animal Life of the River."
- April 2—"The Rawson-MacMillan Expedition of 1926."  
           Motion pictures and lecture, Commander Donald B.  
           MacMillan, Leader of the Expedition.
- April 9—"Anthracite Coal."  
           "Palms."  
           "Elkland."  
           "The Grand Canyon."  
           "Alligators."
- April 16—"Bituminous Coal."  
           "Kindly Fruits of Earth."  
           "Birds of Passage."
- April 23—"Land of Cotton."  
           "Wild Life in Yellowstone Park."  
           "Monkeys."  
           "Familiar Birds."
- April 30—"The Story of Steel."

\*Field Museum makes grateful acknowledgment of the gift of these films by the United States Steel Corporation.

#### AUTUMN COURSE

- October 1—"Alaskan Adventures."
- October 8—"Manchuria."  
           "Our Dog Friends."  
           "The Silversmith."  
           "Peter the Raven."
- October 15—"Maizok of the South Seas."
- October 22—"Sponge Fishing."  
           "Ancient Industries of Modern Days."  
           "A Study of Birds."  
           "Beasts of Prey."  
           "Feathered Aviators."



MOAS (*Dinornis*) OF NEW ZEALAND  
Mural painting by Charles R. Knight  
Ernest R. Graham Hall (Hall 38)





- October 29—"The Gorilla Hunt."  
November 5—"Adopting a Bear Cub."  
              "Tree-top Concert Singers."  
              "The Last of the Bison."  
              "Gathering of the Clan."  
              "The Zoo's Who's Who."  
November 12—"The World's Struggle for Oil."  
November 19—"Silvery Salmon."  
              "Home of the Birds."  
              "Leaves from a Ranger's Notebook".  
              "Cameraing through Africa."  
November 26—"Adventures in the Far North."

## SPECIAL ENTERTAINMENTS

- February 12—"Lincoln."  
February 22—"Washington."  
May 7—"The Dragon Lizards of Komodo."  
May 14—"Racing with Death in Antarctic Blizzards."

LECTURE TOURS FOR CHILDREN.—Lecture tours for children were given without charge to groups from public and parochial schools and private institutions. In the case of the public schools, these lecture tours correlated with the school-room work of the children. In other instances, the collections to be visited were chosen by the leaders of the groups. There were 428 such classes, numbering 13,683 children, which received this service.

EXTENSION LECTURES.—In previous years, extension lectures were offered only to elementary public schools of the city of Chicago. During 1927, these lectures were offered to junior high schools and high schools as well; and a number were given before parent-teachers' associations. The same illustrative material in the form of lantern slides was used for each group of lectures; but varying treatment adapted it to the interests of children of different ages and to the parent-teachers' organizations. The list of lectures was as follows:

- "North American Indians."  
"What We Owe to South America."  
"Coffee, Chocolate and Tea."  
"Flax and Cotton."

- "African Animals."
- "Glimpses of Chinese Life."
- "The Story of Coal and Iron."
- "Food Fish of the World."
- "Roman Home Life."
- "Silk and Wool."
- "The Life of the Ancient Egyptians."
- "Native Life of the Philippine Islands."
- "Activities of Field Museum."
- "Birds of the Chicago Area."
- "Mammals of the Chicago Area."
- "Fish of the Chicago Area."
- "North American Mammals."

These lectures were given without charge in school classrooms and assembly halls. They numbered 556 with an attendance of 209,290.

TOTALS.—In all, 1,006 lectures, tours and entertainments for children with an attendance of 265,649 were given under the provisions of the James Nelson and Anna Louise Raymond Public School and Children's Lecture Fund in the year 1927. If these numbers are added to the number of adults attending Museum events throughout the year, it will be found that 331,778 persons received Museum instruction.

### PUBLICATIONS

In the regular series of Field Museum Publications, five were issued during the past year, two of which were botanical, one anthropological, one zoological, and one the Annual Report of the Director. In addition to these, seven numbers were added to the general leaflet series, and one previously published leaflet (Geology, No. 6) was reprinted. Following is a list of these publications and leaflets:

- Pub. 241.—Anthropological Series, Vol. XVII, No. 1. A Correlation of Mayan and European Calendars. By J. Eric Thompson. January, 1927. 24 pages. Edition 1,540.
- Pub. 242.—Zoological Series, Vol. XIII, Part 5. Catalogue of Birds of the Americas. Initiated by Charles B. Cory. Continued by Charles E. Hellmayr. April 11, 1927. 517 pages. Edition 1,509.
- Pub. 243.—Report Series, Vol. VII, No. 1. Annual Report of the Director for the Year 1926. January, 1927. 174 pp., 20 photogravures. Edition 4,490.

- Pub. 244.—Botanical Series, Vol. IV, No. 5. I. Various Spermatophytes. By J. Francis Macbride. II. Mosses of Peru. By R. S. Williams. May 31, 1927. 44 pp., 10 photogravures. Edition 1,000.
- Pub. 245.—Botanical Series, Vol. VI, No. 2. Citrus Products. Part 2. By James B. McNair. November, 1927. 189 pp., 13 halftones, 5 zinc etchings. Edition 2,512.

## LEAFLETS

- Anthropology, No. 22. Insect Musicians and Cricket Champions of China. By Berthold Laufer. 28 pages, 12 photogravures, 1 cover design. Edition 3,150.
- Anthropology, No. 25. The Civilization of the Mayas. By J. Eric Thompson. 110 pages, 14 photogravures, 12 text-figures, 1 map, 1 cover design. Edition 1,991.
- Anthropology, No. 26. The Early History of Man. By Henry Field. 18 pages, 8 photogravures, 1 map, 1 cover design. Edition 2,999.
- Botany, No. 13. Sugar and Sugar-making. By James B. McNair. 34 pages, 8 halftones, 1 cover design. Edition 6,000.
- Geology, No. 6. (Reprint). The Moon. By O. C. Farrington. 12 pages, 2 photogravures. Edition 6,020.
- Geology, No. 8. Agate—Physical Properties and Origin. By O. C. Farrington. Archaeology and Folk-lore. By Berthold Laufer. 36 pages, 10 photogravures, 4 colored plates, 1 colored text-figure. Edition 2,856.
- Geology, No. 9. How Old are Fossils? By Sharat K. Roy. 12 pages, 4 photogravures. Edition 6,091.
- Zoology, No. 9. Pike, Pickerel and Muskalonge. By Alfred C. Weed. 52 pages, 8 colored plates, 4 text-figures, 1 cover design. Edition 6,050.

## MISCELLANEOUS PUBLICATIONS

- General Guide. 32 pages. Edition 13,464.

## LIBRARY

During the year the Library acquired by purchase, gift and exchange 2,840 books and pamphlets, bringing the total number on the shelves to approximately 92,500. These additions greatly strengthened the resources of the Library. Especially helpful are certain sets of periodicals which have long been desired for reference purposes in the various Departments of the Museum. Among these sets are:

Archiv für Naturgeschichte in 135 volumes, 1835 to date.

Gay's *Historia fisico y politico de Chile*, 30 volumes, 1844-1871.

*Journal of Egyptian Archaeology*, 13 volumes, 1914 to date.

*Zoologische Jahrbücher*, 126 volumes, 1886 to date.

An opportunity to purchase a selected collection of books on Africa and India was presented and taken advantage of. The African literature was further supplemented by other purchases required by members of the staff who have returned from expeditions, and need certain books for reference in preparing their collections for study and exhibition purposes.

Through the courtesy of Dr. Thomas Barbour, Director of the Museum of Comparative Zoology, Cambridge, Massachusetts, the Library has acquired all the early volumes of that institution's *Bulletins* and *Memoirs* which were lacking from its files. As a number of these publications have been long out of print, the Museum is fortunate in obtaining them. The Museum of Comparative Zoology presented also ten copper plates used in illustrating the publication of Alexander Wilson's *American Ornithology* in 1808-1844. These plates are in a fine state of preservation and have considerable historical value.

The Kommission for Ledelsen af de Geologiske og Geografiske Undersøgelser i Grønland presented almost a complete file to date of its *Meddelser om Grønland*, in all 62 volumes. These monographs will be particularly valuable to the members of the staff who are at present in Labrador on the Rawson-MacMillan expedition. Books are an important item in the equipment of the Museum's various expeditions, and in addition to those taken from the Library, small collections are purchased when abroad for further assistance in the work.

To the Edward E. Ayer Ornithological Library were added 167 volumes. Mr. Ayer continued his deep interest in and generous donations to this Library until his death, and it is due to his foresight of years ago that the Library contains so many of the beautifully illustrated works of the early eminent ornithological writers that have been long out of print and rarely if ever appear on the market. Mr. Ayer frequently expressed the desire that this Library should have a foremost place among the libraries of its kind. How well he succeeded in accomplishing this is shown in the catalogue of this Library issued as one of the Museum's publications.

Notable among the rare works received during the year are:

A complete set of *Isis* in 40 volumes covering the years 1817-1840, the only set of this work in the middle west.

Buffon *Oeuvres complètes*. . . *Revue* par M. Richard. 5 volumes. 1837-1808.

Buller's Supplement to the birds of New Zealand. 1905.

Crespon. *Ornithologie du Gard*. 1840.

Férussac. *Bulletin des sciences et de l'industrie*. 85 volumes. 1823-1831.

Lefebvre. *Voyage en Abyssinie*. 4 volumes and atlas. 1845.

Lesson. *Complément des oeuvres de Buffon*. 10 volumes. 1828-1837.

Vieillot. *Faune française*. Oiseaux. 1820-1830.

Wilson. *Illustrations of zoology*. 1831.

Gadow and Selenka. *Bronn's Klassen und Ordnungen des Tierreichs*. . . *Vogel*. 3 volumes. 1891, 1893.

Playfair and Gunther. *Fishes of Zanzibar*. 1866.

From contemporary societies, institutions, governments and individuals throughout the world the Library has received, as in previous years, valuable literature either as gifts or in exchange for the publications of the Museum.

The Library is again indebted to the Library of Congress and to the John Crerar Library especially for the loan of books needed by members of the staff in their research work.

The number of individual issues of journals, magazines and serials received was 6,316. The number of cards written and inserted in the various catalogues was 7,550. From the John Crerar Library 10,104 cards have been received.

The periodicals and serials prepared for binding numbered 598.

The work for the Union list of serials was completed during the year. This list, a monumental work, will be invaluable for bibliographical purposes.

Early in the year all books and shelves in the general library were vacuum cleaned, and the pressing need of shelf room necessitated another readjustment of the books. Several hundred volumes were transferred temporarily to the anthropological library in order to provide room for the normal growth of other sets of periodicals and serials.

## EXPEDITIONS

ANTHROPOLOGY.—During the year there were five expeditions from the Department of Anthropology.

The Field Museum-Oxford University Joint Expedition, financed by Captain Marshall Field and Mr. Herbert Weld, reached the fourth season of its operations, working from December 19, 1926 to March 20, 1927. The excavations were placed in charge of Mr. L. C. Watelin, who was assisted by Mr. Eric Schroeder, scholar of Corpus Christi College, Oxford. Professor S. Langdon of Oxford again assumed the general direction of the work. The principal efforts were bent on the huge complex of mounds in eastern Kish, known as Ingharra, where two sides of the temple tower of the Earth Goddess of Harsagkalama and the southwest side of Nebuchadnezzar's and Nabonidus' reconstruction of the temple were exposed. The huge temple tower built in plano-convex bricks of the early Sumerian period was never again repaired. The temple to the northeast of the stage tower was rebuilt several times, the last builder being Nabonidus, last king of the Babylonian empire and father of Belshazzar, who ruled in the sixth century B.C. and then restored the ancient Sumerian temple in the prevailing Babylonian style of architecture. Portions of it are in an excellent state of preservation with walls standing 20 to 25 feet high. The edifice now completely exposed was approximately 100 feet square, its outer walls being decorated with the T-shaped false pillar decoration characteristic of Babylonian architecture. Another feature typical of this school of builders is found in the huge buttresses flanking the six great gates of the temple. There is a spacious central shrine approached from a gate and two ante-chambers; this central shrine communicates with two chapels on the left and right. So far as present information concerning the disposition of a Babylonian temple permits of conclusions, this structure is undoubtedly one of the clearest and best preserved examples. The great open court is on the northeast side, and the entrance to the inner chapel is from the southwest side of this court. Here were found small deposits of cuneiform tablets, but the brick boxes in which Nabonidus had placed his foundation deposits at the various entrance gates had unfortunately been rifled by the armies of late invaders, although some objects of value were still found in them. Twenty-seven chambers flanking the court and central chapel have been cleared after immense labor. The excavators then descended 25 feet below the temple of Nabonidus before they reached the ancient Sumerian construction built of plano-convex brick,

where early Sumerian sculptures and painted pottery were found. An illustrated report of the season's work by S. Langdon was published in *Art and Archaeology*, October, 1927.

The first year's work of the Captain Marshall Field Expedition to Madagascar under the leadership of Assistant Curator Ralph Linton was summarized in the Director's Report for 1926. The activity of the expedition was continued and completed during 1927. Dr. Linton left Majunga on the west coast of the island in September, 1926, and proceeded up the Betsiboka River to Mahabo, a sacred town of the Sakalava, where he took part in the annual purification of the royal tombs, being the first white man to witness this ceremony. He then continued up the river to Madiravalo, where he turned inland, arriving at Kandreo after two weeks of travel through sparsely inhabited country. He remained in this region collecting, and studying the Sakalava, until the latter part of October, and then proceeded to Maevatanana, the end of the projected automobile road across the island. From there he returned to Tananarive where he remained a month packing collections. He then travelled to Tamatave by train and embarked on the east-coast steamer "Imerina" December 1, landing at Farafangana, on the southeast coast, on December 10. He remained there until December 30, studying and collecting among the Antaifasina tribe, then went by land to Fort Dauphin, arriving January 21. He left the latter place February 1 and went west to Tsiombe, arriving February 10. There he left the regular route and made a detour through the practically unexplored southwestern corner of the island, finally turning northward and arriving at Tulear February 28. He remained in Tulear until March 28, studying the Vezo, a fishing tribe, then traveled eastward, arriving at Betroka, at the southern end of the interior plateau in the heart of the territory of the Bara tribe, April 2. He remained there, studying and collecting, until April 21, then went to Iakora, also in Bara territory, remaining there until May 5. From Iakora he went to Ambalavao, passing by way of Ivohibe, a distance of 350 miles. Headquarters were established at Ambalavao, and an intensive study was made of the southern Betsileo tribe. Dr. Linton remained there until July 16, then went to Mananjary on the east coast, where he arranged for shipments of collections. From Mananjary he went to Ambohimanga in the territory of the Tanala tribe, where he remained until August 20. From there he proceeded to Ambositra, packed and shipped collections, and returned to Tananarive by train and automobile. In Tananarive the work of the expedition was wound up,



and he descended to Tamatave, sailing from there to Mauritius September 12. In Mauritius he made a study of early records, then sailed on an American freight boat to Beira in Portuguese East Africa. From Beira he went to Salisbury in Rhodesia, from there to Sinoia, from Sinoia to Gwelo, and from Gwelo to Fort Victoria, whence he visited by automobile the famous ruins at Great Zimbabwe. Returning to Fort Victoria, he went to Bulawayo, thence to Kimberley, then to Johannesburg, and finally to Capetown. Throughout this African territory museums were visited, exchanges arranged, and ethnologists interviewed. He sailed from Capetown October 7 on S. S. "Saxon," arriving at Southampton October 25. He left England November 16, and arrived in Chicago December 25. By the end of the first year's work it had become evident that Madagascar was divided into three culture areas, and during the past year the method was adopted of studying one or two tribes in each area intensively instead of devoting an equal amount of time to all tribes. Full investigations were carried on among the Antaifasina and Antaisaka in the southeast coast area, among the Vezo and Bara of the west coast area, and among the southern Betsileo and Tanala of the Plateau Area. The culture of the southeast coast area proved to be archaic. The natives of this region have, until recent times, been ignorant of the arts of weaving and pottery-making, dressing in mats or beaten bark and cooking in bamboo joints. Each tribe has a sacred river into which the umbilical cords of all members of the tribe are thrown and beside which the tribal tomb is built. All members of the tribe are buried in a single tomb, a deep trench surrounded by a stockade and usually covered by a house. Men are placed in the north end of the trench; women and children in the south end. Whenever a case of death occurs, all the bodies are lifted out, and the new corpse placed at the bottom. There is a special official, called the Lahy Kibory ("Chief of the Tomb"), who cares for the tomb and also punishes infractions of taboos. The Antaisaka tribe still erects memorial pillars of rough stone identical with the menhirs of prehistoric Europe. One of these, having nearly the same dimensions as the largest monolith at Stonehenge in England, was erected within three months of Dr. Linton's visit, and important information on primitive engineering methods was obtained. In addition to the single stones there are whole groves of menhirs in that region. Over 60 were counted in a single group set up so close together that it was difficult for a man to walk between them. The Vezo and Bara appear to owe their origin to the last large-scale





GROUP OF MULE DEER

Hall of American Mammal Habitat Groups (Hall 16)

Taxidermy by C. J. Albrecht. Background by Charles A. Corwin

About one-eighteenth natural size

invasion of the island. They are much taller, darker, and more Negroid in physical type than the natives of the east coast or plateau areas. The Vezo are a sea people employing the outrigger canoe and double canoe, and making long voyages up and down the west coast. They live almost exclusively by fishing, exchanging their surplus fish with the Masakora and Mikea tribes of the interior for cattle, vegetable foods, and game. The three tribes recognized the same king, but considered themselves distinct, each tribe having its definite field of activity. While the Vezo fish, the Mikea live in the forest, subsisting entirely on wild roots and game; and the Masakora, in the open country, where they practise agriculture and engage in cattle-raising. None of the groups cultivate rice, although this is the principal food in the other two areas. Their religion is highly organized with hereditary sacrificial priests who have special insignia of office. The sacrificial priests and the medicine-men are sharply differentiated, and no individual may hold both offices. The medicine-men practise astrology, and have an unusually elaborate form of divination, full details of which were obtained. The Bara, who live in the southern interior of the island, are a cattle people of African type. They are semi-nomadic, shifting their villages at the slightest excuse. They live largely on sour milk and rarely cultivate rice. They are expert metal workers, and are the only group in the island who know how to cast brass and silver figures by the lost wax process. They are also excellent wood-carvers, and know how to weave and make pottery. They are the most warlike tribe in Madagascar, having retained their independence until very recent times. They have hereditary ceremonial priests, like the Vezo, and had a highly centralized government with kings of the African type, to whom they paid exaggerated respect. They declared that when they first entered their present territory they found there a race of small brown people whom they called the Kimoso. These had straight or wavy hair, and the men were heavily bearded. They dressed in bark cloth and fought with wooden spears, clubs, and slings. They lived in fortified villages, the names of some of which are remembered, and pursued agriculture and cattle-raising, being inferior to the Bara only in metal-working. After several generations of warfare they were exterminated or driven northward, but they were never enslaved, because of their fierce and intractable character. Flacourt, who was at Fort Dauphin in the beginning of the seventeenth century, heard stories of these people which agree in important details with those told Dr. Linton by the living Bara, and it seems certain that such a group actually

existed. Special attention was devoted to the southern Betsileo because they are at the present time the least influenced tribe of plateau culture. They lived in long established towns fortified with elaborate systems of ditches and walls, subsisted mainly on rice which they raised in irrigated terraces, and were well advanced in all the arts, although inferior to the Bara in metal-working. They are still the best weavers in Madagascar, and very valuable data were obtained on their methods of preparing native wild silk. The tribe is divided into four castes—royalty, nobles, commoners, and slaves. Souls of commoners and slaves are supposed to go to Mount Ambondrombe, a real locality, and live as on earth; those of nobles to enter crocodiles, and those of royalty either to go to the region above the sky, where the gods live, or enter snakes. Many individuals promise to answer prayers made to them after death, and have shrines, usually in the form of cairns or stone tables, where sacrifices are made. Menhirs are erected for both men and women of importance. The dead are buried in family tombs, vaults dug in the hard volcanic soil at the bottom of shafts which are sometimes as much as 60 feet deep. The Betsileo have stories of an aboriginal tribe, the Vazimba, but describe these as a black Negroid people of low culture. The Tanala are one of the least known tribes in Madagascar. They occupy a mountainous region of heavy jungle and almost constant rain, and are really a composite group made up of defeated clans forced out of more desirable territory. They have retained many old cultural features which throw a flood of light on ancient conditions elsewhere. They are the only tribe on the island who remember the manufacture of stone implements, and have many traditions of an original population of black dwarfs who lived in caves, had no weapons except wooden spears and no cutting implements except flakes of quartz, and who made fire with the fire saw, although all the modern Malagasy use the fire drill. One of the Tanala clans claims descent from these aborigines, and one still finds occasional individuals of Negrito type among them. Another division of the tribes known as the Red Clan, is very light in color, with reddish brown hair and almost European features. Marriage is usually within the clan, that between the children of a brother and sister being most favored. Until recent times descent appears to have been traced in the female line, and women have a higher position than in any other Malagasy tribe, acting as medicine-men and even as sacrificial priests. In ancient times there were no caste distinctions. The principal Tanala weapon was the blowgun with poisoned darts. The infor-

mation obtained by the expedition makes it possible to outline the history of Madagascar as follows: The earliest inhabitants appear to have been black pigmies related to those of the Andaman Islands, Philippines, and neighboring islands, rather than to those of Africa. Following these, but prior to the beginning of our era, there was an invasion of brown people from the Indonesian region, who had reached about the same stage of culture as the historic Polynesians and were closely related to them. Still later peoples of mixed Negro race came to the west coast from Africa, and gradually forced their way inland, driving the brown people before them. There may also have been a later migration from the neighborhood of Java and Sumatra, and Arab colonies were founded on the east coast between the eighth and eleventh centuries of our era. The existence of an ancient settlement of Asiatics within 230 miles of the African coast has not been suspected before, and will make it necessary to revise most of the accepted theories of African culture origins. A race that could make the 3,000-mile voyage from Indonesia to Madagascar could have crossed the Mozambique Channel at will. It seems probable that there were Asiatic settlements on the mainland itself. Perhaps these were destroyed by the comparatively recent southward migration of the Bantu-speaking tribes of Africa. From Salisbury in Rhodesia, Dr. Linton made a side trip of about 350 miles into Mashonaland to acquire some first-hand knowledge of African native life and to determine whether the native culture shows any affinity with that of Madagascar. In regard to the ruins of Great Zimbabwe it has been suggested that they are the work of semi-civilized gold-mining people who used Madagascar as a base of operations. The ruins, however, show no close relationship with any Madagascar structures.

Assistant Curator William D. Strong, anthropologist on the Rawson-MacMillan Subarctic Expedition, sailed on the schooner *Radio* from Wiscasset, Maine, on June 25. In the latter part of July the party camped at a site about twenty miles northwest of Nain, Labrador. Dr. Strong found three cairn burials at Hopedale and examined the so-called Norse ruins on Sculpin Island, determining that they are of Eskimo and rather recent origin. It has been asserted that the Eskimos of Labrador did not inter their dead in cairns, and it has been argued that all stone ruins found there must be ascribed to the Norsemen. This opinion is now disproved, as Dr. Strong discovered three stone burials containing Eskimo skeletons accompanied by good Eskimoan implements and old European trade goods. The

contents of these graves have been secured for the Museum. In August a three weeks' reconnaissance tour of Frobisher Bay, Baffin Land, was undertaken, and a camp of Eskimos living in quite primitive style was encountered. Only a few old people and children lived there, as the men were in the interior on their annual caribou hunt. They were still found in possession of their native fur clothing, seal-skin tents, and kayaks. At Brewster's Point on the north shore of Frobisher Bay the first good ruins were discovered and marked for excavation for the following year; they are apparently of the old Tunit type encountered by Rasmussen on the west coast of Hudson Bay. From Brewster's Point the expedition proceeded into the Countess of Warwick Sound, where in 1756-78 Sir Martin Frobisher carried on his ill-fated mining ventures. The ruins of his house and the pits for mining which he had dug are still visible, being located on Kodlunarn Island, a bleak, barren spot, for the early explorers feared the Eskimos. Digging in these ruins, Dr. Strong brought to light fragments of brick, plaster, coal, and porcelain—incontrovertible proof of their European origin. In 1861 Charles Francis Hall first located the exact site of Frobisher's camp and mapped and described it; since that time the ruins have not been visited by any exploring party. In a radio communication of November 13, Dr. Strong reported that he had secured interesting archaeological material suggestive of an old Indian-like culture on the coast, a problem which will be studied more closely next summer. Some collections were obtained on canoe trips 100 miles up Hunt's River. During the winter it is planned to study the nomadic Naskapi who live largely on caribou herds in the interior of Labrador. These people are almost unknown to science, and it is important that they be fully studied, as they still observe their old customs. They represent more nearly than any other group the old undifferentiated Algonkin culture, since they were forced into their northern habitat at a very early time when the Iroquoian tribes pushed up from the south and replaced the older Algonkian peoples.

During the autumn of this year Assistant Curator J. Eric Thompson was engaged in locating archaeological sites for future excavations and making an ethnological study of the Maya Indians of southern British Honduras, Central America. The primary object of this research was the study of the old religious and magical beliefs that might throw light on Maya archaeological problems. Despite several centuries of nominal conversion to Christianity practically all the Maya stock retains much of its old religion. The Mayas of southern

British Honduras comprise two linguistic families. The smaller group are Maya-speaking Mopans or Itzas, the larger group are Kekchi-speaking Chols, immigrants from the Cajabow area of Guatemala. An attempt was made to concentrate on the Maya-speaking Indians of San Antonio, but it was necessary to extend the work to embrace the Kekchi-Chols, as the latter had profoundly influenced the former. Special attention was paid to the beliefs and practices associated with agriculture, and the numerous prayers, ceremonies, and inhibitions in connection with each stage of the agricultural routine were obtained. Of peculiar interest is the discovery of a belief in a corn spirit residing in the crop, who takes refuge in the last section of the maize to be harvested. This spirit passes into the seed to be sown the following year, and without it the Mayas believe the crop would be a failure. A great deal of the culture of these Indians appears to have remained almost untouched since the arrival of the Spaniards. In recent years, however, this barrier of conservatism is breaking down before the pent-up flood of European culture, and there is no time to lose to recover this priceless material before the Mayas are reduced to a drab colorless "civilized" uniformity. It is proposed to continue this work during the coming season, also to prepare a publication on the subject. Acting on information obtained from mahogany cutters, Mr. Thompson revisited the site of Pusilha at the junction of the Joventud and Pusilha or Machaca Rivers in the southwestern part of British Honduras, close to the Guatemalan boundary. There he found seven dated stelae and a dated lintel. All the stelae were broken and had fallen down. Unfortunately some of the pieces were too heavy to be turned; however, the following dates were recovered:

						A. D.
Stele 1	9-12-0-0-0	10 Ahan	8 Yaxkin	September 1	412	
Stele 2	9-3-0-0-0	2 Ahan	8 Muan?	April 3	235	
Stele 3	9-14-0-0-0	6 Ahan	13 Muan?	February 3	452	
Lintel 1	9-7-0-0-0	7 Ahan	3 Kankin	February 8	314	

All are contemporaneous dates except stele 2, which was probably erected at least 150 years later. The readings of stelae 2 and 3 are doubtful. It is hoped to recover the remaining dates in January, 1928, when Assistant Curator Thompson will take the field to carry out archaeological and ethnological investigations in British Honduras under the Captain Marshall Field endowment fund. Excavations will be carried on over a period of four months at Corozal in northern Honduras and other sites. Knowledge of the



culture and especially the pottery of the Mayas of the Old Empire is still weak, and it will be the purpose of the expedition to obtain more information on these subjects. The Mayas are but scantily represented in the Museum, and an endeavor will be made to remedy this deficiency. At the conclusion of the excavations ethnological work will be resumed among the Mayas of southern British Honduras and the adjacent area of Guatemala, and, if possible, a preliminary investigation will be made of the culture of the Ixil Mayas of Guatemala. No study of this people has ever been attempted. They are extremely hostile to the white man. There is reason to believe they may retain many traces of their old organization and customs.

Assistant Curator Henry Field left for Europe in the beginning of August to study sites in the prehistoric caves of France and Spain and to collect material and data for groups and exhibits to be placed in the proposed Hall of Prehistoric Man. In the pursuit of his task he was assisted by Professor Breuil, Dr. Obermaier, two artists, and a photographer. He secured extensive collections of paleolithic flints and numerous casts, photographs, sketches, and oil paintings which will furnish the accessories for the cases of the hall in question. In November he left Europe for Jerusalem, and while on his way to Baghdad, made a collection of 12,000 paleolithic and neolithic implements, including a fine and interesting series of worked examples in flint. He reports that he discovered 25 new prehistoric sites in the North Arabian Desert. He reached Baghdad on November 28 after a journey of some 1,750 miles through the desert, and will join the staff of excavators at Kish during the coming season to assist especially in the work of photography and taking care of skeletal material.

The Department also benefited from other museum expeditions, notably from the Borden-Field Museum Alaska-Arctic Expedition conducted by Mr. John Borden, who presented an excellent collection of Eskimo material described under the heading Accessions, and from the Captain Marshall Field Brazilian Expedition during which Mr. H. W. Nichols, Associate Curator of Geology, had occasion to examine the ruins of two deserted Inca towns, Lasana and Pucara, and of two Inca burial-places in the Atacama Desert of northern Chile, from which a series of interesting objects was secured.

**BOTANY.**—The exploration work for the year consisted in the continuation of the Captain Marshall Field Botanical Expedition in the Peruvian Andes by the well-known botanist, Dr. A. Weberbauer.

He encountered a favorable season, and in February and March collected in the departments of Tumbes and Piura 109 numbers, totaling 587 specimens. This collection has not yet been studied, but will undoubtedly add many species to the Peruvian collections that were hitherto unrepresented and in many cases will prove either to be new or known previously only from Ecuador. Especially it will aid in a better understanding of the distribution of the species of the more northern Andes. Although a purchase, mention may be made here of a collection of 700 specimens by Mr. Carlos Schunke from the vicinity of La Merced, Peru. This material is considered further in this Report under Accessions.

The Department shared in a number of Museum Expeditions: the Borden-Field Museum Alaska-Arctic Expedition, 1927, yielded 106 specimens, prepared by Miss Frances Ames; the Captain Marshall Field Brazilian Expedition, 1926, brought back 14 items of interest, secured by Messrs. H. W. Nichols and H. Eggers; the Rawson-MacMillan Subarctic Expedition of Field Museum in 1926 turned in 446 specimens of Labrador plants by Messrs. C. S. Sewall and A. C. Weed and in 1927, 236 sheets by Mr. Sewall; the Captain Marshall Field South American Expedition (Geology) 1925-1927, incidentally contributed 29 interesting Argentinian plants collected by Mr. Elmer S. Riggs; the Captain Marshall Field Expedition to Madagascar, 1925-1927, furnished, through Dr. Ralph Linton, a representation of the palm that supplies raffia. Grateful acknowledgment is made to these scientists in geology, anthropology, and zoology for bringing back some representations of the flora of faraway lands.

During the summer 200 herbarium specimens were collected in Illinois and Indiana by the Assistant Curator of Taxonomy. These are for exchange and for the herbarium, as there are still a number of locally occurring species inadequately represented in the study collections.

The Acting Curator, accompanied by Mr. Sella, spent a few days in the mountains near Laramie, Wyoming, at a locality suggested by Professor Aven Nelson of the University of Wyoming as a favorable collecting ground for alpine plants. The trip was made in connection with the plan for an ecological group to show the typical Rocky Mountain vegetation above the snow line. A collection was made of the relatively few plants which were to be had at the end of the season.

GEOLOGY.—Early in September, the Curator and Associate Curator of Geology went by motor to Smithfield, Illinois, and examined a mass of drift copper of unusual size which had been found during some ditching operations at that place. The place of discovery of the mass was visited, and the geological nature of the formation in which it was found carefully investigated. The mass of copper itself was measured and photographed, and negotiations were entered into which may result in its ultimate acquisition by the Museum.

Later in the season the Curator visited several pegmatite quarries in Maine, where an unusually active season had afforded exceptional opportunities for collecting representative mineral specimens. A large crystal of beryl, weighing about 100 pounds, was collected; also large crystals of orthoclase and spodumene, tourmalines of unusual colors, quartz of a quality for fusing, columbite, and several other rare minerals.

The Second Captain Marshall Field Paleontological Expedition to Argentina and Bolivia, in charge of Associate Curator Riggs, assisted by Mr. Robert C. Thorne as collector and by Dr. Rudolf Stahlecker as stratigrapher and collector, continued field work during the greater part of the year. Having finished collecting in the Pliocene formations of the Province of Catamarca, Argentina, the party, at the end of December, 1926, proceeded to Tucuman and thence to Buenos Aires.

The task which occupied the expedition during 1927 was to make collections of the great extinct mammals which are known from the Pleistocene formations in South America. The fossil remains of these animals have been found in old river channels, in valley deposits, and beneath the surface in great plains areas. Such formations are distributed through many parts of South America. It therefore remained for the expedition to select those localities in which the action of rains and streams were laying bare the strata in which the fossils are known to occur, in such a way as to make possible discovery of the fossils.

The first locality chosen as a collecting ground was the Pampean formations of central Argentina. The sands and the clays of these formations are found in the great plains areas in strata 30 to 40 feet in thickness lying just below the heavy black soil. In this fertile belt, covered with abundant vegetation, the fossil remains which the expedition was seeking, lie buried. The only places where the collector could see what lay below the surface were in the banks of streams and in the low cliffs facing the sea. Most of the streams of

# BONAPARTE'S GULL

This bird is the smallest of the American gulls. It is common in the northern part of the continent, especially in the mountains of the Pacific coast, where it is found in the highest ranges. It is also found in the mountains of the Atlantic coast, where it is found in the highest ranges. It is also found in the mountains of the Pacific coast, where it is found in the highest ranges.

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No. 11

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No. 2-222



TYPE OF CASE LOANED TO THE SCHOOLS OF CHICAGO BY THE N. W. HARRIS PUBLIC SCHOOL EXTENSION OF  
FIELD MUSEUM OF NATURAL HISTORY  
One-sixth actual size



this region, excepting the great rivers at the north, were found to flow through marshy lands, where the banks were concealed by the growth of grass. Along the southern coast it was observed that some of the streams fall over ledges of stone in a series of cataracts and so have carved out narrow channels of considerable depth. The walls of these channels exposed the fossil-bearing layers and so offered favorable collecting grounds. A similar condition was found in the sea-cliffs, where the waves were continually wearing away the harder rock-ledges which are there laid bare.

At the beginning of the year Collectors Thorne and Stahlecker, provided with light working equipment, proceeded to the Port of Necochea to begin collecting at the coast. The leader of the party was occupied, meanwhile, in Buenos Aires with securing the necessary permit to export the collections which had arrived from Catamarca. Another task was to secure renewal of the annual permit to make collections in Argentina. These matters, deferred by tedious delays, occupied some weeks. Late in January the leader, with camp man, proceeded by railway to Bahia Blanca to bring to the new base of operations the motor cars and additional camp equipment which had been stored there since the movement northward of the First Expedition in June of 1924. This equipment was then conveyed by motor to Necochea, where a working camp was established. Collecting was by this time well begun.

Operations carried on from the Port of Necochea and from the neighboring village of Quequen, consisted in search along the low sea cliffs and in the ledges exposed on the beach at low tide. These collecting grounds were most readily reached by walking over the beach sands. A belt of sand dunes extending some miles inland and backed by a zone of marshes and lagoons, made approach to the shore with vehicles possible in a few places only. Search was extended day by day along the coast eastward and westward from the camp, and from such points as it was possible to approach with a light car. Six weeks were spent in this locality. The more important specimens secured were: a skeleton of the ground sloth, *Glossotherium*, a heavy-bodied animal comparable in size to the modern hippopotamus; some skulls and other parts of ground sloths related to the above, and specimens of rodents and other smaller animals.

Reconnaissance was then made some 50 miles westward along the coast, and a camp temporarily established there. After a few days the party moved to the Quequen River some twenty miles inland. Step by step the formations exposed in the river banks and in the

lesser tributaries, were gone over. From time to time the camp was moved farther upstream so as to keep pace with the work of search and excavation. Many times each day the collectors waded or swam the stream as they proceeded from point to point. As specimens were secured, they were packed and shipped in lots to a warehouse in Buenos Aires. The Quequen River and several of its tributaries were thus followed to a point some 60 miles from the sea, where low and swampy banks rendered further collecting in that direction impractical. Specimens secured from the Quequen River consisted of one articulated skeleton of the ground sloth *Scelidodon*, an animal somewhat smaller than the *Glossotherium* found at the coast. One of these specimens was almost complete, with head and legs in natural position. Other specimens collected, were a skull and various other parts of the great saber-tooth tiger *Smilodon*, parts of a skeleton of the southern *Mastodon*, and other smaller specimens of scientific value.

Late in March the leader, in company with Dr. Stahlecker, visited the classic collecting ground at Miramar and examined the formations there. This locality, which has been reported as yielding artifacts of human make associated with bones of extinct mammals, was examined and a few specimens collected. The control of this locality by local museums, as well as the appearance of continued rains, made any considerable collecting at that time impractical.

The two sections of the party then met at Estancia Moro, east of Quequen, for a final survey of the coastwise exposures. Finding that the fossils there were poorly preserved, the party moved westward to the city of Tres Arroyas and to the Quequen Salada River. The latter proved to be the most profitable collecting ground which this expedition encountered in the Province of Buenos Aires. In its lower course this stream plunges over a series of falls, and below them has cut a deep and narrow channel through the most fertile wheat-lands of Argentina. In the banks of this river-channel, which are swept clean every year by high waters, there was found a splendid specimen of the greatest of the ground sloths, *Megatherium americanum*. The skull, neck, torso, and many of the leg and foot bones were all preserved. This specimen, with additions, will enable the Museum to assemble a mounted skeleton of this animal.

Of special interest was the discovery, in association with the remains of the great sloth, of a half skeleton of the great saber-tooth tiger, *Smilodon*. These two specimens were discovered by Dr. Stahlecker in the face of a vertical bank of the river some 25 feet below the surface of the ground. High waters of previous years had

undermined this bank, resulting in a small landslide, which revealed the bones of the animals. The specimens were secured by making a considerable lateral excavation, or "drift," and by removing them in large sections.

Other specimens secured from this locality include a skull of the lesser ground-sloth, *Glossotherium*, parts of the armament of the great glyptodont, *Panochthus*, an entire skeleton of a viscaccia-like rodent, and various specimens of fossil horses and llamas. The historic locality of Monte Hermosa, made famous by the early researches of Darwin, was visited. A few skulls and jaws were secured there, but little collecting could be done on account of the banks of sea-sand which covered the principal fossil-bearing reef, and which are said to be removed only by the late storms of winter.

With the close of the southern summer and the approach of unsettled weather, the party moved northward into Bolivia. Dr. Stahlecker's services being no longer available, Señor Jose Strucco was employed as a second collector. The scene of the First Expedition's labors in the Valley of Tarija was visited. The party was cordially received by old friends, but unsettled conditions and threatening hostilities placed restraint upon immediate operations. While awaiting official sanction, some collecting was done in the vicinity of the City of Tarija.

The objective of the expedition in Bolivia was to make collections from the formations of the earlier Pleistocene age which would serve to connect, in historical sequence, the Pliocene fauna of Catamarca with the later Pleistocene fauna of central Argentina. The earlier Pleistocene deposits were therefore sought out in the smaller isolated valleys of the Department of Tarija. While the larger valley has been known for the occurrence of fossil mammals, which the natives have designated as the "bones of giants" since the coming of the early Jesuit priests to that section, its isolation from the greater avenues of travel, and the difficulty of transporting heavy objects across mountain valleys and over ridges 12,000 feet in elevation has proved an effective barrier against the removal of extensive collections. However, Argentinian, Norwegian, and French collectors have made known to the outside world the scientific treasures of this locality. More recently a national highway has admitted travel by motor car and has made possible the transportation to railway of objects too heavy for pack-mules to carry.

A camp of the Museum expedition was, in due course, established near the village of Patcaya, in a valley where little fossil collect-



ing had been carried on. The formation there proved to be relatively rich in remains of ground sloths and in those of fossil horses. An almost entire articulated skeleton of *Megatherium*, of a smaller species than that found in Argentina, rewarded careful search by Mr. Thorne. An old river channel deposit proved sufficiently rich in fossils to make excavation profitable. Such work was carried on under personal supervision of the leader, and at the expense of removing sixteen feet of overlying clays. Bones sufficient to insure mounting a skeleton of the great sloth, *Lestodon*, were there secured. Another locality yielded to the patient search of Señor Strucco three incomplete skeletons of *Glossotherium*. A large section of the dermal armor of this animal, embedded in matrix, with parts of the skeleton, was also secured. Other specimens obtained were: skull and leg of the immigrant horse, *Equus*; parts of the large-headed and short-legged pseudo-horse, *Hippidion*; specimens of the camel-like but three-toed and trunk-bearing *Macrauchenia*, and specimens of various members of the *Llama* family.

The problem of transporting from this isolated valley a collection of 5,000 pounds weight proved a difficult one. Ordinarily specimens secured were carried to camp on the shoulders of the collectors or their peon-helpers, at the end of the day's work. The plaster of paris required for wrapping the specimens was baked in a native clay oven. It was made from crystals of gypsum which had been gathered by peons from the hillside. This material was ground to fineness by hand on a flat stone and sifted through a piece of wire screen. Lumber for making packing cases was brought some 80 miles from the valley of Bermejo on the backs of burros. At the camp, or at a native carpenter shop, this timber was further sawed by hand into shapes suitable for the purpose. When packing-cases had thus been prepared, and the specimens packed in them, they were borne either on the backs of burros to Tarija or, if too large for the strength of the animals, they were lashed to poles and borne by native men to a roadway which was passable for automobile transport. More or less injury to specimens was inevitable by these methods.

In October the party returned by way of LaPaz, Lake Titicaca, and Mollendo, to Chicago. Most of the collections have now been received at the Museum, and from time to time will be placed on exhibition. Altogether, 118 specimens of fossil mammals were collected by the Expedition during the year, and 245 negatives illustrating various phases of the work in Argentina and Bolivia were

made. In addition, small collections of modern reptiles, skins of modern mammals, and plants found in the regions visited, were obtained for the use of other departments of the Museum.

Assistant Curator Roy accompanied the Rawson-MacMillan Subarctic Expedition of the year, as geologist. His efforts were chiefly devoted to the study and collection of the invertebrate fossils of the regions visited. Typical rock specimens were also collected and many general observations made. Some of the localities from which representative specimens were obtained in Labrador, were Battle Harbor, Hopedale, Nain and adjacent islands. The only fossils found in Labrador were a few drift fossils that had been carried down by ice from the Hudson Strait region and Baffin Land. With the exception of one area north of the Straits of Belle Isle, no sedimentary deposit was seen on the entire coast of Labrador. The single area referred to has been fully described by members of the Canadian Geological Survey. Special attention was devoted to the exploration of such portions of Baffin Land as could be visited, chiefly those about Frobisher Bay. As a result of this work, Mr. Roy was able to prepare a more accurate map of the bay and surrounding areas than had previously been made, and to determine many of the important features of the region.

He reached Frobisher Bay on the evening of August 9. This bay, which is situated on the southeast side of Baffin Land, has an entrance 55 miles wide, bounded by Resolution Island on the southwest and Lok's Island on the northeast. The bay extends in a general northwesterly direction for about 150 miles. The upper part of the bay has many rocky capes, numerous islands and shoals, and is divided into two arms. A group of larger islands, containing Chase and Gabriel Islands, occupies the middle of the bay. The southeast coast of the bay (Kingsite side) was found to be composed of high, rugged, barren, igneous hills indented by numerous fiords and partially covered by Grinnell Glacier, which discharges by way of several tongues into the bay. The general dip of the beds was found to be S. 70° E. and N. 10° W. The coast has all the marks common in a glaciated region, such as lakes, cirques, hanging valleys and deep fiords. In the valleys between the hills, lakes formed by the draining of streams by moraines, eskers and kames were common. The physiography of the coast was found to be essentially the same, except that the hills are not so high and there is no existing glacier. The northeast coast of the bay is also a barren, rugged land, but it does not show the work of ice as conspicuously as the other coast.

Another contrasting feature of the northeast coast noted was that the hills were massive and seldom showed any bedding planes. While the entire coast was essentially barren and covered with glacial debris, a few areas of fertile, arable land were noted.

Both coasts of the bay were examined as thoroughly as time permitted, and collections were made from eleven different places. The fossils found on both coasts were all drift fossils of Trenton and Utica stage and had doubtless been brought to the coast from the interior of Baffin Land. No sedimentary deposit, either fossiliferous or non-fossiliferous, was observed anywhere except at Silliman's Fossil Mountain, where the largest and best collection of fossils in situ was made. This mountain is in  $63^{\circ} 43'N$ . Latitude and  $69^{\circ} 02'W$ . Longitude. It lies at the head of the bay, about 300 feet from high tide and two and one-half miles south of the Jordan River. It is a hill of limestone and lies unconformably on the hills of Meta Incognita. It is about three-quarters of a mile long and 320 feet high (by aneroid) and runs in a general northwest and southeast direction.

The exact number of fossil specimens collected is not yet known, but it is doubtless well over 500. Most of them are still in the matrix. They are all of the middle Ordovician Period (Trenton and Utica stage), and include the classes: Brachiopoda, Lamellibranchiata, Gastropoda, Cephalopoda, Trilobita and other Arthropoda, Echinodermata, Coelenterata and Porifera—the Cephalopoda being the most abundant. Representative collections of the igneous and metamorphic rocks of both coasts were also made. These rocks consist of schistose and gneissoid types together with some basalts and perhaps some peridotites. All are believed to be of Pre-Cambrian and probably Archaean age. The extent of Grinnell glacier, discovered and named by Captain Hall in 1865, was determined as far as possible by Mr. Roy, and evidence was obtained which indicates considerable decline of this body of ice since that time. In the latter part of the year Mr. Roy transferred his base of operations to Newfoundland and continued collecting there. Localities in which he collected there were chiefly those yielding Cambrian fossils, and a number of good specimens of these have already been obtained. Reconnaissance work was carried on in Notre Dame Bay, Trinity Bay and Conception Bay. In Notre Dame Bay no Cambrian deposit was observed. Collecting in Trinity Bay, however, gave excellent results, upwards of 400 specimens of fossils of lower Cambrian age having been obtained. These represent the classes: Lamellibranchiata, Annelida,

Gastropoda and Trilobita. Many of these fossils are complete, well preserved and in excellent condition. Occurring in delicate shales, they require considerable preparation, and this work will be carried forward during the winter. At Conception Bay, well-preserved fossils of lower, middle and upper Cambrian horizons were found, and further collecting will be carried on there. Deposits of economic importance noted showed ores of iron, copper, lead and manganese.

ZOOLOGY.—During the year six important expeditions, devoted wholly or mainly to zoological work, were in the field. Three of these worked in Alaska, Labrador and the Arctic; two were in central and eastern Africa; and one was in southern and central South America. Field work in India also was done through the cooperation of Colonel J. C. Faunthorpe, and zoological specimens in some numbers were received from expeditions conducted by other departments of the Museum. Cooperation was continued with the Third Asiatic Expedition of the American Museum of Natural History.

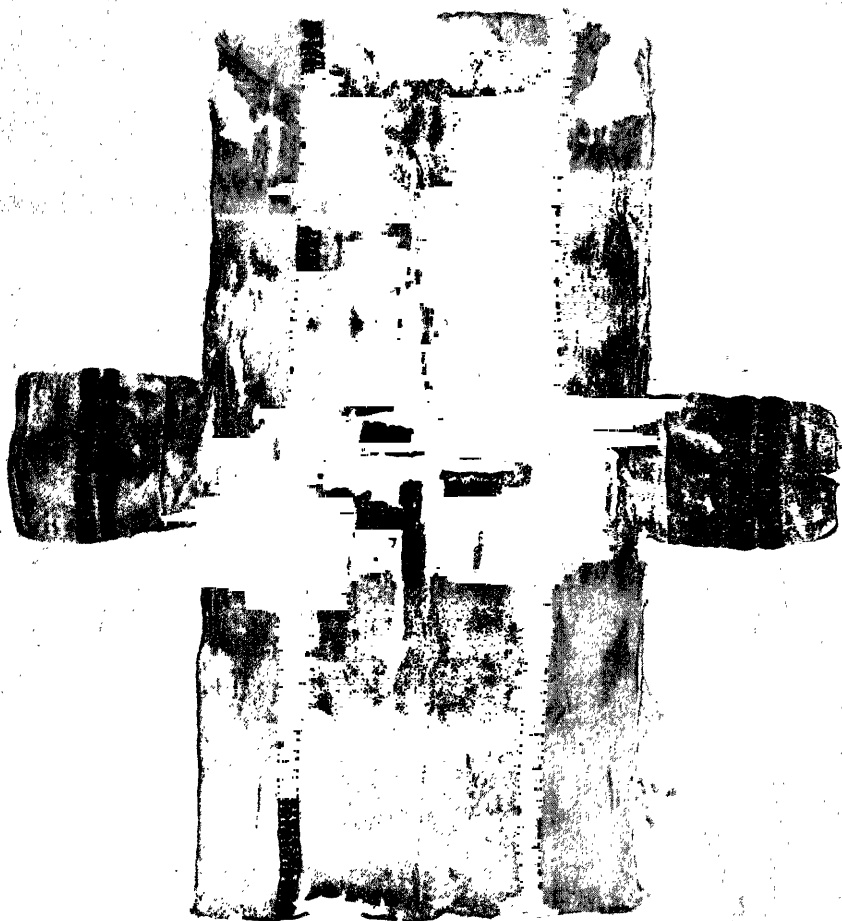
The Captain Marshall Field Brazilian Expedition, with reduced personnel, continued work begun in 1926. The zoological section of this expedition included originally Mr. George K. Cherrie, Mrs. Marshall Field, Mrs. Grace G. Seton, Mr. Curzon Taylor, Mr. Karl P. Schmidt, and Mr. Colin C. Sanborn. Most of the party returned in 1926, but Mr. Sanborn, with one native assistant, continued until October, 1927. He spent a total of four months in Uruguay traveling some 2,000 miles by motor truck, visiting eight Departments of the country and making collections at twelve different points. Among the birds obtained were five species not previously recorded from Uruguay. Two specimens were secured of a very rare bird discovered by Charles Darwin nearly 100 years ago and not reported subsequently. It is the Straight-billed Reed Runner, a small bird of wren-like habits, and the specimens now in Field Museum are the only ones extant with the exception of Darwin's original types in the British Museum. The total collections from Uruguay number 345 mammals, 462 birds, 786 reptiles, and 2,500 fish, being the only important collection of Uruguayan vertebrates in the United States.

Uruguayan authorities, both military and civil, were most courteous and helpful, furnishing permits, introductions, and information. Mr. H. J. Doyle, of Armour and Company, at Montevideo, also extended hospitality and provided letters of introduction. Early in February, Mr. Sanborn was directed to collect group material for

exhibition. This work first took him to the Territory of Santa Cruz, Patagonia, where a group of Guanacos was collected during the month of March. Nearly all the young Guanacos, which are born in November and December, had been killed for their hides, so it was only by great good fortune that three young ones, which had been born very late in the season, were secured. Seven adult specimens were also taken. This animal is being exterminated as a pest, since it interferes with the sheep industry. Messrs. Rollitt and Kendall of the firm of that name in Santa Cruz, were very helpful to the party. The Santa Cruz collection was shipped from Buenos Aires and on April 17 start was made up the Paraguay and Parana Rivers to Descalvados, headquarters of the Brazil Land and Cattle Company, which was not reached until June 12, after many difficulties and delays due mainly to storms and floods. At this point, Mr. J. G. Ramsay, who had been host of the expedition in 1926, provided all facilities for work and several camps were made in the vicinity. Thirteen Swamp Deer, ranging from young fawns to old males with large horns, were obtained and prepared for exhibition purposes. Blood-sucking vampire bats at one camp made serious attacks on the horses, but were prevented from continuing by tying the horses in the light of a powerful gasoline lantern which was kept burning all night. Further groups were obtained of the American Tapir and the Giant Anteater or Antbear. Besides the groups and their accessories about 100 other mammals were collected, representing practically all the large and medium-sized species found in this part of Brazil. Work was concluded on September 5. The expedition received much assistance from American diplomatic officers in Rio de Janeiro, Montevideo, Buenos Aires, and Asuncion, for which the Museum makes grateful acknowledgment.

The Field Museum-Chicago Daily News Abyssinian Expedition, after getting well started in 1926, as recounted in the report for that year, continued with marked success during 1927. Work in the Chilalo Mountains of the Province of Arussi was carried on at several camps. In addition to the exhibition group of the large beautiful antelope known as the Mountain Nyala, mentioned previously, very thorough collections were made of all the vertebrate life of this peculiar mountain region. On leaving these mountains, the party was divided and one section, with Messrs. Osgood and Fuertes, proceeded southward, while the other, with Messrs. Baum, Bailey, and Cutting, turned eastward. The first section worked around the southern end of the Chilalo Mountains and crossed the canyon of the Webbi Shebeli





COPTIC CHILD'S GARMENT OF WOOL  
Front and back with woven designs in purple and red  
An example from an extensive collection of Egyptian fabrics  
Presented by Stanley Field and Ernest R. Graham, Chicago  
One-seventh actual size

River near Lajo in the Province of Bale. Thence they ascended the Gedeb Mountains and spent some days in a magnificent forest inhabited by many interesting birds and by troops of the black and white Guereza Monkeys. From this point, they crossed high plateau country about the source of the Webbi Shebeli and entered the Province of Sidamo in which considerable time was spent in a bamboo forest harboring many animals not met with elsewhere in Abyssinia. After visiting the capital of the province at Agara Salaam and its hospitable chief, Dejazmatch Balcha, the party turned northward and made its way toward Addis Ababa via the chain of lakes which here occupy the northerly extension of the famous Rift Valley. Camps were made successively on Lakes Awasa, Abyata, Shala and Zwai. Some large game was found in this region, including Hippopotamus, Greater Koodoo, Hartebeest, and Gazelles, but attention was devoted mainly to smaller mammals and birds. Thence return was rapidly made, again crossing the Hawash River and passing through the the Province of Gurage to Addis Ababa.

Meanwhile, the other section of the expedition trekked eastward across the open Arussi plateau and descended the the Webbi Shebeli River near the foot of Mount Abu Kasim. Owing to recent unseasonable rains, the river was found to be in flood, and it was only after waiting several days for it to subside that a very difficult crossing was made. From this point, the party proceeded to the Mohammedan settlement of Sheik Hussein. In this vicinity, which was relatively hot and arid, a number of large mammals were collected, including Greater and Lesser Koodoo, Warthog, Dik Dik, Hamadryas Baboon, and Spotted Hyena. Somewhat farther on, at Luku Wells, considerable game was encountered, the most important being Grevy's Zebra, Oryx, Gerenuk, and Koodoo. From Luku Wells, the party continued east and northeast and recrossed the Webbi Shebeli and thence onward through little known and almost waterless country to the Chercher Mountains. Thence a difficult trail led to Bodessa and Galampso. Pasturage for mules in this region was scanty and loads had to be lightened and saddle mules pressed into service. On January 13 the small station of Arba on the railroad was reached, whence the mule caravan proceeded to Addis Ababa and a short trip by camel transport was arranged at Hawash Station. In this vicinity near the Hawash River, among the large mammals found were the Waterbuck, Hartebeest, Bushbuck, and Soemmerring's Gazelle. Large collections of birds and small mammals made between the Webbi and Hawash rivers included many species not found elsewhere.



The two sections of the party rejoined in Addis Ababa January 22 and, after packing and shipping specimens, reorganizing caravan, and arranging official formalities, the entire expedition started northward February 9. Progress was rapid across the upland plains of Shoa and, after crossing the canyon of the Muger River where a short stop was made, the caravan continued to the Abai or Blue Nile which was crossed without especial difficulty February 16-18. Passage through the districts of Dejem and Gubea led on to the village of Bichana, at that time the temporary seat of Ras Hailu, ruler of the Province of Gojam. This powerful potentate received the expedition with great cordiality, showering its members with gifts, entertaining them at feasts, and providing them with guides and facilities for travel through his territory. Some days were spent at Bichana and its vicinity and, on leaving, the party was again divided.

Messrs. Osgood and Fuertes went westward via Debra Marcos, Dembecha, and Jigga and thence into the knot of high mountains in central Gojam, ascending Mount Amedamit and visiting the ultimate source of the Blue Nile, a little spring known as Gish Abbai and represented on certain maps as Sakalla. Descending via N'jabara, Dangela, and Ismala, they worked around the west shore of Lake Tsana and then turned northwestward and dropped down over the steep escarpment to the upper Jira River, thence to the Gendoa River and thence to Gallabat. This trip was productive of a wide variety of specimens and much information on the distribution of animals. In a small stream near the head of the Blue Nile, an interesting Water Rat was discovered, representing a new genus of rodents. Large mammals taken included Reedbuck, Defassa Waterbuck, Roan Antelope, Oribi, and Bush Pig.

The other section of the party with Messrs. Cutting, Baum, and Bailey proceeded northward from Bichana, recrossed the Blue Nile and continued over a level plain around the east side of Lake Tsana to Gondar. At Gondar, assistance and courtesies were received from the Italian Consul, and the march was continued northeast to the village of Devart where the local chief, Dejazmatch Ayalu, was most hospitable. His permission was obtained to hunt ibex in the mountains of Simien, and some days later camp was made among the precipitous cliffs of these mountains in the heart of the ibex country. After difficult and dangerous hunting, a series of the Abyssinian Ibex was secured, being the first of the rare species to be obtained by American collectors. Among rare birds obtained in the same region was a series of a little known Alpine Chough.

From the Simien Mountains, return was made to Gondar, followed by long marches westward through relatively dry country. The two sections of the expedition met on the Gendoa River, a few days' march from the Sudan border. They proceeded to Gallabat where they were cordially received by Captain Gordon, British military officer stationed there, and Mr. Emery, British customs officer. The caravan was then disbanded and, on April 23, the members of the expedition left Gallabat by automobile for Gedaref and Wad Medani where railhead was reached.

By division of the party from time to time, the Abyssinian expedition was enabled to cover much territory and enter various physical areas differing widely in their animal life. In all, nearly 2,000 miles were traversed, but conditions were such and organization so arranged, that the collecting of specimens was almost uninterrupted. The result was a very large and varied collection, including some 1,350 mammals, 2,000 birds, and a small number of reptiles and fishes.

The Museum is deeply appreciative of the marked courtesy with which its Abyssinian expedition was received by His Highness Ras Tafari, Prince Regent and Heir to the throne of Ethiopia. Without his cordial cooperation the expedition would have been quite impossible. Other Abyssinian officials were uniformly hospitable and helpful. Among those to whom grateful acknowledgment is made are Fitaurari Hopta Giorgis, Minister of War and Governor of Arussi; Ras Hailu, Governor of Gojam; Dejazmatch Ayalu, Governor of Simien; Dejazmatch Balcha, Governor of Sidamo; and Belata Herui, Adviser to Ras Tafari. The expedition is also indebted for assistance to Mr. C. H. Bentinck, British Minister at Addis Ababa, to Colonel D. A. Sandford, and Mr. David Hall, of Addis Ababa, and to Dr. A. W. Pollock and his staff of the American Mission.

The Conover-Everard African Expedition continued the important work begun in 1926. This expedition consisting of Mr. Boardman Conover, Associate in Birds, Mr. R. H. Everard of Detroit, and Mr. J. T. Zimmer, Assistant Curator of Birds, sailed from New York April 3, 1926 for London, en route to Tanganyika Territory, East Africa. Landing at Dar-es-Salaam and later at Tanga, the party first visited the Usambara Mountains and the plains at their foot, near the Kenya border. Later, it crossed to the central railway and worked in the country lying south of Kilossa toward the Mahenge district, as detailed in the report for 1926.

Leaving Kilossa on November 4, the expedition proceeded up the line of the central railway to Kigoma and crossed Lake Tangan-

yika by boat into the Belgian Congo, landing at Albertville on November 9. From Albertville the route led by rail to Kabalo on the upper Congo River or Lualaba River, thence by river steamer upstream to the head of navigation at Bukama, which was made temporary headquarters. Until January 5, 1927, the expedition remained in the general neighborhood of Bukama, making one extended camp on the river at the native village of Katobwe and another back at the foot of the hills near the village of Katapena, thence returning to Bukama.

At Katobwe, a species of Kob was enormously abundant in herds of thousands, but was almost the only antelope found in the region. A series of skins and many skulls of this species were secured. The animal was known locally as "Lechwe." A series of lakes lying back from the river, the open plains surrounding the lakes, and a fringe of oil palms along the river banks furnished a variety of bird and mammal life.

Owing to heavy rains and flooded land, it required two days to reach the foot of the hills at Katapena, and the same conditions impeded work there after arrival. The only large game obtained was a single specimen of the White or Yellow-backed Duiker which was found at the lower edge of the hillside woods, an unusual situation according to native guides who reported that the animal's accustomed habitat was the dense forest at the top of these same hills. The specimen was of unusual size, apparently a record in length of horn for the Congo, although larger examples have been taken in Rhodesia. Bird life was interesting in this locality, and a number of new forms were added to the collection.

Returning to Kabalo, Albertville, and Kigoma, the party descended the central railway as far as Tabora. Floods at various places impeded movement and threatened to cut off communication with Mwanza, the next objective. Accordingly little collecting was done at Tabora, and as soon as arrangements could be made and reserve supplies brought up from Kilossa, the expedition set out by motor lorries for Mwanza on the southern shore of Lake Victoria Nyanza. This point was reached in two days, and shortly thereafter another day's travel by dhow along the southern end of the lake brought the party to Katungulu where another camp was established. Here collecting was done until March 4, resulting in more species of birds and mammals being added to the series.

Returning to Mwanza, the party took a lake steamer around the western and northern end of the lake to Kampala, landing at Port

Bell, Uganda. After arrangements were made to secure game licenses, export specimens, etc., the expedition proceeded by motor lorry and car to Butiaba, on the shore of Lake Albert Edward, reaching this place on March 24 after a delay in Masindi to interview provincial officials. At Butiaba, passage was secured by river steamer to the foot of the lake and thence down the Nile to Rhino Camp, where it was hoped to secure a White Rhinoceros. General collecting was postponed until after this desideratum was obtained, except for occasional specimens obtained near camp. After considerable search a suitable White Rhinoceros was killed on April 6, and the complete skin and skeleton were preserved following three more days of continuous labor to pare and clean the specimen. The party then moved up away from the river camp to higher and better ground to continue the work of collecting. Here, however, activities were interrupted by an officious local game warden to such an extent that it was necessary to return to Kampala, where higher authorities, including the Governor of Uganda, made such amends as possible and were most courteous, but much time was lost. The expedition then returned to the coast at Mombasa and took ship for Marseilles, reaching Chicago on June 16. Total accessions from the expedition comprised 905 birds, 374 mammals, 303 reptiles, 2 birds' nests and 3 eggs, and a few insects.

The Borden-Field Museum Alaska-Arctic Expedition, organized and financed by Mr. John Borden, a Trustee of the Museum, and well known for his personal activity and interest in natural history, explored the coast of northwestern Alaska and penetrated the polar sea as far as Wrangell Island. The zoological results of this expedition include a number of exceptionally fine specimens of large mammals much needed for the completion of exhibition groups in the Museum's Hall of American Mammal Habitat Groups. Chief of these is a group of Peninsula Brown Bears (*Ursus dalli gyas*) which are the largest carnivorous animals now living, rivalling in size the Cave Bear of Pleistocene times. Of the four specimens selected for a group, two were shot by Mrs. John Borden, one by Miss Frances Ames, and the fourth, an exceptionally large male, by Mrs. R. B. Slaughter. The expedition also obtained specimens of Polar Bears and the complete skin and skull of a large male Pacific Walrus, a species of larger size than the Atlantic Walrus.

On June 20, Mr. Ashley Hine, taxidermist of the division of birds, left for Nome, Alaska, to join the Borden-Field Museum Alaska-Arctic Expedition. A number of birds were taken near Nome

prior to leaving for Wrangell Island, Arctic Ocean. Considerable collecting was done at Little Diomedé Island, Bering Strait, Point Hope and Wrangell Island. At the latter place only three species of birds were taken. Specimens were procured at Kolyuchin Island (Siberia), King and St. Lawrence Islands, Dutch Harbor, Bogoslof, Aleutian Islands and Alaska Peninsula. Bird life was plentiful at most places where collecting was done. On August 27, near Akutan Pass, Aleutian Islands, the sea was black with Slender-billed Shearwaters in an immense flock 35 miles wide. Many of the 111 specimens of birds collected on the expedition will be used in the reorganization of the systematic series of mounted birds. Mr. Hine returned to San Francisco, on September 10.

The Alexander Revell-Field Museum Alaskan Expedition, led by Mr. R. W. Tansill, worked from Puget Sound to the vicinity of Pavlof Bay on the Alaska Peninsula where five specimens of the Peninsula Brown Bear were obtained, including one large old female. A brown bear was also obtained by this expedition on Admiralty Island, and at other points thirteen birdskins were taken.

The Rawson-MacMillan Subarctic Expedition sailed from Wiscasset, Maine, in June with two zoologists of the Museum staff in its personnel, Mr. Alfred C. Weed, Assistant Curator of Fishes and Mr. A. G. Rueckert, taxidermist. The expedition made a few stops in Labrador and continued northward to Baffin Land, but owing to the approach of winter, made only a brief stop there. Animal life was scarce and few specimens were collected. Returning to Labrador, winter quarters were established at Anatalak Bay, near Nain, and some collecting of specimens was begun about October 1. Among the few specimens which it was possible to ship out before the close of communications were thirteen birdskins from Baffin Land. Last mail reports indicated that other birds and a few small mammals had been collected in addition to a considerable number of fishes. A number of color studies of fresh fish had been prepared by Mr. Rueckert.

The following list indicates the various expeditions in the field during the year:

LOCALITY	COLLECTORS	MATERIAL
KISH, MESOPOTAMIA....	Stephen Langdon L. C. Watelin Henry Field	Archaeological Collections.
BRITISH HONDURAS.....	J. Eric Thompson	Archaeological Collections.
MADAGASCAR .....	Ralph Linton	Ethnological Collections.

EUROPE AND NORTH ARABIAN DESERT.....	Henry Field	Archaeological Collections.
ALASKA AND ARCTIC REGIONS .....	Mr. and Mrs. John Borden, Mr. and Mrs. R. B. Slaughter, Miss Frances Ames, Ashley Hine	Zoological and Ethnological Collections.
PERU .....	A. Weberbauer	Botanical Collections.
COSTA RICA .....	G. Proctor Cooper	Botanical Collections.
ARGENTINA AND BOLIVIA	Elmer S. Riggs Robert C. Thorne.	Paleontological Collections.
NEWFOUNDLAND .....	S. K. Roy	Paleontological Collections.
MAINE .....	O. C. Farrington	Geological Collections.
ABYSSINIA.....	W. H. Osgood Alfred M. Bailey Louis A. Fuertes C. Suydam Cutting Jack Baum	Zoological Collections.
BRAZIL, ARGENTINA, PARAGUAY AND URUGAY	Colin C. Sanborn	Zoological Collections.
TANGANYIKA, CONGO AND UGANDA, AFRICA .....	Boardman Conover Robert T. Everard John T. Zimmer	Zoological and Ethnological Collections.
ALASKA .....	R. W. Tansill	Zoological Collections.
INDIA .....	Col. J. C. Faunthorpe	Zoological Collections.
LABRADOR AND BAFFIN LAND .....	Donald B. MacMillan A. C. Weed A. G. Rueckert S. K. Roy W. D. Strong Charles S. Sewell Dr. E. K. Langford	Anthropological, Geological, Botanical and Zoological Collections.

Leader of expedition named first in each case.

## ACCESSIONS

ANTHROPOLOGY.—The new accessions recorded during the year by the Department of Anthropology amount to 55. Of these 36 are by gift, ten as the result of expeditions, one by exchange, and eight by purchase. These accessions cover numerous parts of the globe and aggregate a total of 4,423 objects. The principal accessions are briefly reviewed in the geographical order of the countries from which the material comes.

It is a pleasure to record the splendid gift of Mr. John Borden, leader of the Borden-Field Museum Alaska-Arctic Expedition, not

only on account of the superior quality and rarity of the material, but also because it was received carefully labeled as to places of origin, and accompanied by complete information from the collector and donor. The Curator would deem himself fortunate if all collectors would observe the same discriminate care. Mr. Borden's collection from the Eskimos of Alaska and Arctic regions of Canada is the most important addition made in many years to the Museum's previous collections relating to Eskimoan culture. Many objects are entirely novel to the Institution, above all, copper knives and copper arrowheads from the so-called Blond or Copper Eskimos of northern Canada, of which the Museum has heretofore not had a single example. An attractive series of ancient mammoth ivory carvings are engraved with designs of a style which reveals a phase of Eskimo art hitherto unknown. There is an abundance of carved walrus tusks, and figures and toys of walrus ivory, of great beauty and artistic merit, which make the collection valuable to the student of primitive art and a source of enjoyment to the general public. The stone and pottery cooking-vessels in the collection belong to the rarest and most treasured of Eskimo objects. Numerous jade axes, bone and ivory harpoon-points and other weapons and implements are prominent features of this remarkable collection which aggregates a total of 533 objects and of which the Institution has every reason to be proud.

Commander D. B. MacMillan added 42 objects from the Eskimos of Greenland to the collection received from him last year as a result of the Rawson-MacMillan Subarctic Expedition of 1926. The new accession comprises fine bird-skin mats, a fur shirt decorated with glass beads and leather appliqué work, clothing and boots, dolls, beads, knives, models of boats, and steatite figures of animals. An interesting ethnological collection (171 objects) illustrating the life of the Montagnais of Labrador was secured by purchase from Dr. Frank G. Speck, professor of anthropology at the University of Pennsylvania, who had obtained it during an expedition this year to the region of Lake St. John Montagnais. The collection is very rich in material illustrative of the religious practices of the tribe, and, being based on serious research, is accompanied by full data. The Montagnais are closely related to the Naskapi of Labrador whose culture Assistant Curator Strong is studying while in Labrador with the Rawson-MacMillan Expedition of 1927-28, so that in due course of time the Museum may hope to have a complete representation of the ethnology of Labrador.



A TUCUM PALM

A long-spined palm tree from Surinam  
Recently installed in the palm collection in Hall 25  
Stanley Field Guiana Expedition, 1922  
One-eighteenth natural size





An exceedingly fine grass woven bag from the Aleutian Islands was presented by Mrs. Walter L. Peck of Chicago.

Thirteen pieces of painted pottery from the Southwest and Mexico are a gift of Mrs. Edward E. Ayer. These had been collected on his travels by the late Edward E. Ayer.

A fine old woolen Navaho blanket decorated in native dyes of blue, pink, and brown, formerly the proud possession of Spotted Tail, chief of the Rosebud Sioux, was presented by Miss M. O'Hara of Highland Park, Illinois.

Father Willard-Jones of Kenosha, Wisconsin, presented an interesting woman's dress of elk-skin decorated with colored beads and fringe of the Sioux of South Dakota.

The Museum purchased from Dr. S. G. Morley a small private collection of Maya and Toltec antiquities obtained by him in the course of his numerous expeditions in Central America. Maya material is very scarce, and the Maya field is but scantily represented in the Museum. The new collection includes a very fine bowl from the great Maya metropolis of Copan. The bowl is painted red, black, and cream, and portrays the god of the Number Seven. Above is a band of slightly conventionalized hieroglyphs. Mercury 1,500 years old, found in a vault below a stele at Copan, is a curious feature of the collection. Of special interest are two jadeite cores from which ear-plugs were cut. These two examples are the only ones of their type known from the Maya area. The collection also includes a superb Toltec mask of diorite from Cholula, one of the three most important Toltec cities. A small ethnological and archaeological collection was obtained by Assistant Curator Thompson in Guatemala, Honduras, and British Honduras. It includes examples of Kekchi weaving from the Copan region, Guatemala. Hitherto the Museum has possessed no ethnological material from any part of the Maya area save Yucatan. The archaeological material consists of a small series of pottery figurines and a small jadeite amulet.

Through exchange with the Göteborg Museum of Sweden a collection of 105 ethnological objects from Brazil and Bolivia was received. These had been gathered by Baron Erland Nordenskiöld, the well-known expert in South American ethnology, and bear chiefly on two groups, the Choroti tribe in the western Chaco and the Yurakare, one of the forest tribes in southeastern Bolivia; others are from the Parentrintins who live on a tributary of the Rio Madeira in the central Amazon basin, and from the Palikur tribe located near the Atlantic coast on the borders of Brazil and French Guiana. Many of

these objects are of value in supplementing the Museum's material from the regions in question. A collection of weapons, baskets, musical instruments, domestic utensils, and paddles was presented by Assistant Curator McGovern. It was obtained on his expedition to the Northwest Amazon Basin and relates to the tribes bordering the Caiary, Papury, Awa, Pira Parana and Apaporis rivers. Most of the tribes of this region exhibit a great uniformity of culture, so that the artifacts of one tribe are typical of nearly all the other tribes in the area.

An interesting small collection of Inca antiquities exhumed from two burial-places in northern Chile was received from Mr. H. W. Nichols, Associate Curator of Geology, while he was a member of the Captain Marshall Field Brazilian Expedition. Mr. H. Eggers, a mining engineer, who cooperated with him in this work, added to this collection eight objects among which a limestone image of primitive workmanship, a robe of llama-skin, a silver bell and a silver vessel merit special mention.

Mr. Thomas S. Hughes, prominent art-dealer of Chicago, presented an interesting archaeological collection including beads from Egypt, among these one string of unusually tiny and delicate blue glass beads, some ancient Greek and South Italian pottery, minute glass vases, fragments of iridescent glass, and a Roman pottery lamp beautifully decorated in relief with the story of the rescue of the infants Romulus and Remus.

A rich harvest totaling 1,136 antiquities has been gathered as a result of the excavations carried on at Kish. These comprise 153 plain pottery bowls and domestic utensils, sherds of painted pottery, 10 pieces of glazed pottery, 159 human clay figurines, 56 animal clay figurines, 11 objects of bone and 16 of shell, 106 stone implements, 7 stone bowls, 7 stone fragments with designs, 2 marble statuettes, 130 bronze implements, 7 strung necklaces, more than 400 beads of all descriptions, 34 cylinder seals, 17 spindle-whorls, 2 arrowheads, and an ostrich egg. Jewelry occupies a prominent place: the collection contains gold finger-rings, gold studs, gold pins, and gold beads as well as bronze rings and pieces of coral. One of the most interesting trophies is the foundation brick box of Nabonidus, last king of the Babylonian empire, in which were found a gold pin surmounted by a bead of lapis lazuli, gold beads, and other jewels. The box consists of six bricks—four whole and two half bricks, and was discovered under the altar in the great temple. Inside of it was found a statuette of unbaked earth in fragmentary condition, representing a god hold-

ing a thin blade of gold. One of the important inscribed tablets recording a sale of land at Kish and dated in the sixth year of Sinmuballit, fifth king of the first Babylonian dynasty (2087-67 B.C.), has been assigned to the Museum by Professor Langdon who published a detailed description of it in the *Revue d'Assyriologie*. Twelve inscribed Babylonian clay tablets of the Ur and Larsa dynasties were presented by Mr. Henry J. Patten.

Mr. Edward E. Ayer, almost until the moment of his death, was untiring in his efforts to make notable additions to his pewter collection. It is characteristic of the man that his genuine love for the Museum and its work occupied his mind till the last day of his life. The new gifts, consisting of 21 objects, all except one from China, include a fine altar set of five pieces (censer, pair of flower-vases and a pair of candlesticks) inlaid with decorations in brass of dragons, birds, flowers, and Buddha-hand citrus; a pilgrim's bottle with copper inlays; pewter boxes with scenery and figures of the Eight Immortals in brass inlays; a pewter cash-box, and a number of exquisite tea-pots and water-ewers. One of these is of coconut-shell mounted on pewter. There is a very artistic pewter bowl, lined with a coat of cracked porcelain, and engraved with a spray of orchids and a poem of two lines. Two incense-burners in the shape of phoenixes and large candlesticks supported by figures are likewise deserving of special mention. In memory of her husband, Mrs. Edward E. Ayer presented a unique pewter statuette of an Arhat, one of the disciples of Buddha, reading a prayer roll, of the Ming period (1368-1643) and the graceful Japanese pewter figure of a cat of the eighteenth century. A carved stone slab from a funerary chamber of the Han dynasty (second century A.D.) is the gift of Mr. A. W. Bahr, New York. It shows in flat relief a double-roofed house resting on columns, with rafters terminating in dragon-heads, and a chariot drawn by a horse in motion. As the Museum heretofore did not possess any sculptures of that period, and as they are exceedingly rare and difficult to obtain, this gift is deeply appreciated. An ancient Chinese mariner's compass combined with a sun-dial was secured by purchase. In view of the fact that the Chinese are regarded as the inventors of the mariner's compass, this is an important addition to a proposed exhibit of scientific instruments of China for which the Curator has been collecting material and data for a number of years.

Messrs. Grow and Cuttle of Chicago, importers of Oriental goods, in view of their interest in the Chinese section of the Department and in recognition of services rendered to them in the past in the identi-

fication of antiques, entered into an arrangement with the Museum by which a certain number of Chinese objects will be donated by them every year. The first contribution, made in 1927, consists of two very fine and early pieces of celadon pottery, one glazed mortuary clay figure of the T'ang and six of the Ming period, a figure carved from a root, representing a youth with a deer, a unique vase carved from eaglewood root in its natural formation, and a Ju-i sceptre of good luck delicately carved from sandalwood.

Mrs. Charles B. Goodspeed of Chicago presented the complete silk dress of a Mongol woman from Urga adorned with a stunning head-dress, shoulder piece, ear-rings, and chatelaine of plated jewelry wrought in filigree and inlaid with turquoise and coral beads. The costume has been installed on a figure with facial cast, and a photographure of it illustrates this Report.

A valuable collection of ancient skulls found in burial caves of Bohol Island in the Philippines was purchased from E. B. Christie, a student of Philippine ethnology.

Few primitive peoples are more fascinating than the aborigines of Australia, for their culture, though now much disintegrated by European contact, has always remained in splendid isolation, uncontaminated by outside influences. The Museum has been fortunate in securing from western Australia, where the natives are the least affected by foreign intrusion, a collection of 450 ethnological objects, every one of which is a good and authentic example of native skill. This collection was purchased from Mr. John F. Connelly, a resident of Perth and a lifelong student of aboriginal life, and it is one of the most noteworthy accessions of the year. It includes beautifully fashioned spear-heads of stone, with minute serrations around their edges, which are reminiscent of the very early history of man; so also are the stone clubs formed by hafting a ground stone axe-head in a cloven stick. Wooden clubs, shields, and boomerangs are represented in great variety. These have been well selected with a view to showing how a particular style of art centralizes in a given locality; while not far away another band of aborigines adopts a totally different form and pattern to which they rigidly adhere. Personal ornament is typified by ingeniously made shell disks, emu plumes, necklaces of seeds, bone pins to be stuck through the septum of the nose, and red ochre which has a magical import when rubbed on the body or on weapons. The bullroarer, a thin slat of wood that can be twirled on a string, at first sight appears as a mere toy; but to the Australian it is the voice of a spirit or god who speaks in the whining note produced

when the roarer is twirled at ceremonies for initiating boys into tribal life. Curiously carved pieces of wood, described as "message sticks," convey some idea of the first stages in the evolution of writing, and these are equaled in interest by the "death pointers." These slender bones are taken to a secret spot by a magician who wishes to harm his enemy. Directing the point toward his sleeping foe he says, "May your heart be torn asunder." The method of making fire by twirling one stick upon another is illustrated by several sets of the primitive apparatus.

The Captain Marshall Field Expedition to Madagascar under the leadership of Assistant Curator Linton was very successful in obtaining ethnological collections illustrative of the various cultures of the island, approximately 2,750 objects being gathered in 1927 as against 1,750 the preceding year, making a total of 4,500 objects from the expedition. This may be designated without exaggeration as by far the largest and most complete Madagascar collection in existence. Because of the rapid destruction of the primitive cultures many of the objects secured could not be duplicated even at the present time. About 750 objects were obtained from the Sakalava tribe, the outstanding features of the collection being about 150 pieces of old gold and silver jewelry, many of which are of very fine workmanship, and 25 pieces of figured raffia cloth made by the warping process. The manufacture of a single strip of this cloth is said to require three months of continuous labor, and there are now only twelve women who know how to make it. There are no examples of these fabrics in English or other American museums. As the art will unquestionably become extinct in a few years, the examples obtained are priceless. Approximately 700 specimens were collected from the tribes of the southeast coast, principally from the Antaifasina and Tanosy. The culture of this region is simple, and the material consists largely of ordinary tools and utensils, as well as garments made from finely woven flexible mats. An ancient shield, the last in the possession of the Antaifasina tribe, and a number of well-carved wooden bowls are of especial interest. Included also are cleverly made wooden figures of fishes with flexible horn fins, which were used as decoys for fish-spearing.

The Antandroy and Mahafaly, little known tribes in the extreme south of the island, are represented by unusually good collections. These comprise many examples of weaving and beadwork, silver jewelry, stone tobacco-pipes, many charms, and sacred objects, as well as a large number of very fine wood-carvings, including a

series of original memorial carvings of the sort placed on tombs. Wooden pillows delicately carved with figures of birds, men, and animals are especially noteworthy, as they have not previously been represented in museum collections. This tribe, although semi-nomadic, makes excellent wood-carvings, and does the best metal work in Madagascar. A portrait of a young woman, carved in hard red wood, and several groups of smaller figures showing dancers and wrestlers in life-like poses are deserving of especial mention. Two spears with figures of oxen on the blades in high relief and two old war-knives with cast brass hilts—one representing a horse, the other a man, ox, crocodile, and chicken—mark the highest point reached by the native smiths. Skin garments of a hitherto unknown type were collected among the eastern Bara. A nearly complete collection from the Tanala shows the arts and industries of this interesting and isolated tribe. Especially noteworthy are the finely made boxes of wood and horn which serve as purses, and the mantles of woven bast dyed throughout with old vegetable pigments in soft blues, reds, and yellows. This tribe is ignorant of spinning, but weaves cloths from coarse threads made by rolling on the thigh, and afterwards beating the fabric to a felt-like consistency. Additional collections were made among the Betsileo, a number of unique objects being obtained. The most important of these are two royal cloaks or lambas, dyed with a sacred blue dye, the making of which was attended with elaborate observances; a battle-axe carried as a royal emblem, and the lamp of the last Betsileo king, a magnificent piece of wrought iron over five feet high. Many rare old cloaks were also obtained, the most valuable being a silk shroud woven by a woman of royal caste for her own use. Material was collected for four miniature groups, three of which are designed to show typical village scenes in each of the three Madagascar culture areas, and one to illustrate the erection of megalithic monuments as practised by the natives. These monuments are identical with the menhirs of prehistoric Europe, and the native engineering methods are probably nearly the same as those used in the erection of Stonehenge, and Carnac in Brittany. Some collecting was done in Africa, small collections from the Barotse and Bushmen being obtained; likewise a good and thoroughly documented collection of South African paleolithic implements, showing all the recognized cultures, was purchased from Dr. Neville Jones of Bulawayo, the acknowledged authority on the subject. This is the first collection of the sort to be brought to America.

The Museum has been fortunate in obtaining through purchase from M. Grimaud an original skeleton coming down from the Magdalenian age, the last of the three periods which form the Upper Paleolithic of France. This is the skeleton of a young man, about 25 years of age, judging from the perfect condition of the teeth; and, considering the fact that he was alive some 25,000 years ago in south-western France, it is in a truly remarkable state of preservation. The man was about five feet, nine inches in height, and belonged to the late Cro-Magnon race, which was tall and of excellent physique. The skeleton was discovered in a small rock-shelter called Cap-Blanc near Laussel in the Dordogne region of France. In the strata of this cave a fine series of early Magdalenian implements were unearthed by Dr. Lalanne during 1910. On the wall of the rock-shelter was found a carved frieze of six wild horses following one another in line. Work was considered at an end when one of the workmen accidentally drove his pickaxe into a skull lying some three feet beneath the nose of the largest sculptured horse. Work was resumed, and the complete skeleton brought to light. The body had been covered with small stones, and had not been buried. Three blocks of stone were lying on the head, and these had unfortunately crushed the top jaw through the lower. This is at present the only paleolithic skeleton from France in this country.

BOTANY.—It is gratifying, indeed, to be able to record a very substantial gain over the previous year in the number of specimens added to the study collections and the exhibits in the Department of Botany. During 1927, 14,918 specimens were received in this Department as compared with about 12,500 in 1926 and about 9,000 in 1925. More than 4,000 of these were gifts, and nearly 4,000 came in exchanges—a very gratifying proportion indicative of the interest and good will of individuals and of other institutions. There was an increase both in the herbarium and in the economic material received, including additions to the exhibits, the accessions totaling 272.

The largest gift of the year, numerically speaking, was from Dr. E. E. Sherff of Chicago, whose studies in the genus *Bidens* of the *Compositae* have made him known to all botanists. This gift-collection consists of over 3,000 specimens constituting Dr. Sherff's private herbarium. It is especially rich in the plants of Illinois and adjacent or nearby states, and will add many things to both the Illinois and general herbaria heretofore lacking or imperfectly represented. This



gift to the herbarium is undoubtedly the outstanding one received in a long time, considered from the standpoint of its permanent value and its interest to students of the local flora.

Professor Record of Yale University has shared with the Department various collections of tropical American plants which he has received in connection with his well-known studies on tropical American woods. The specimens for the herbarium number 640, of which 150 are accompanied by examples of the wood. This gift is particularly welcome, for it adds to the herbarium and to the wood collections much new material of importance for reference in connection with taxonomic work on plants of the American tropics.

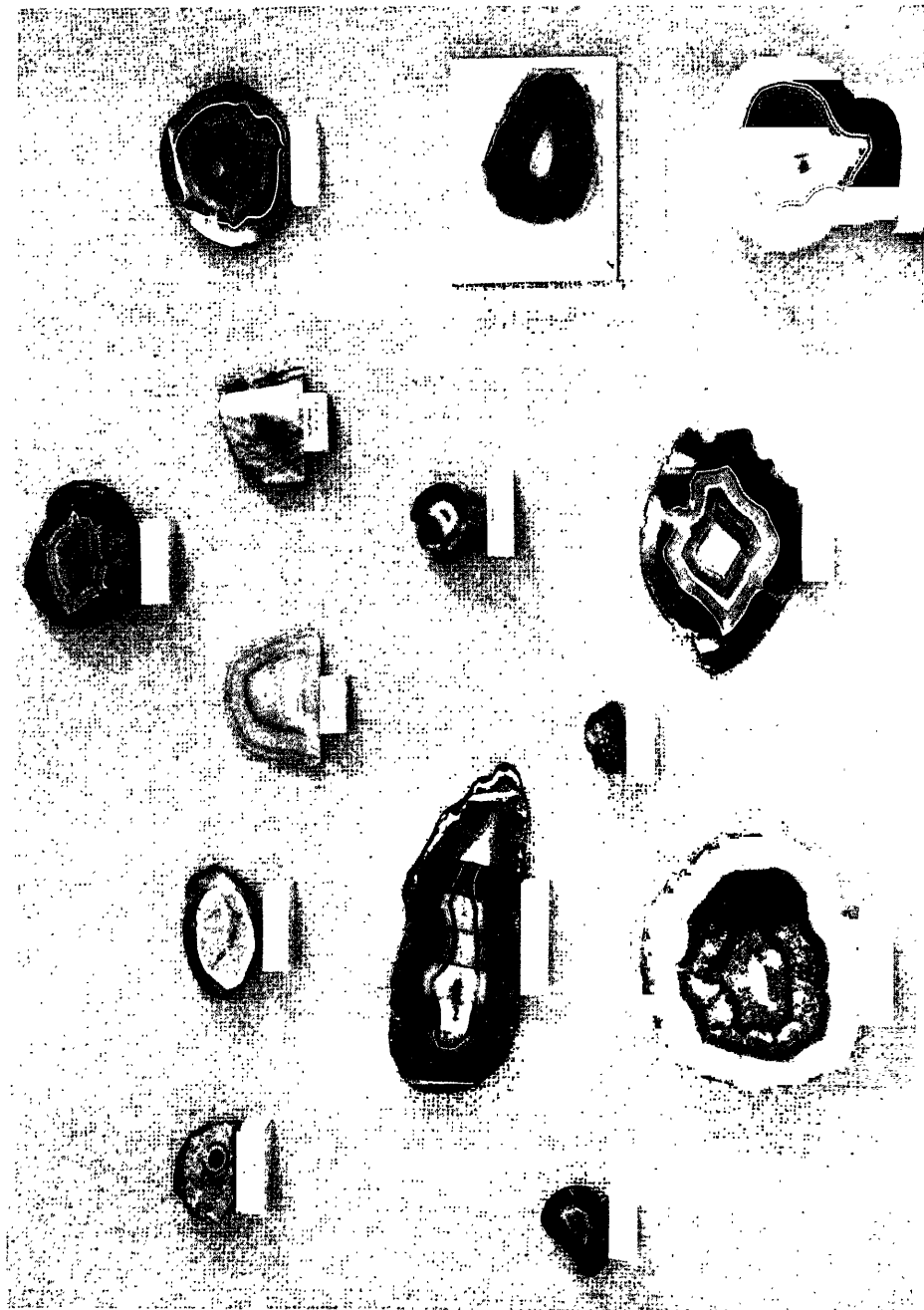
It is a pleasure to record a further contribution to the herbarium from the indefatigable collector, Mr. H. C. Benke, whose generosity and interest in building up the herbarium of Illinois plants has prompted him to add 238 specimens, either new to the collection or from new localities. He has also kindly presented the Department with 116 sheets for exchange.

Professor C. J. Chamberlain of the University of Chicago has further enriched the Cycad collection, which his gift of last year so greatly augmented, by the presentation of a series of seeds of Cycads.

Several lots of photographs of type-specimens have been donated during the year, notably 42 prints, mostly of mints, from Dr. Carl Epling of the University of California, Southern Branch; 6 of types of *Oenothera*, courtesy of Dr. H. M. Hall; 8 of *Borages* and 1 of *Parosela* from Dr. I. M. Johnston, the *Parosela* very kindly obtained by Dr. Johnston at Kew on special request.

Further gifts during the year were 17 Florida herbarium specimens from Mr. H. E. Wheeler, Curator, Alabama Museum of Natural History; 39 herbarium specimens of *Bidens*, Dr. E. E. Sherff, Chicago Normal School; 1 specimen of *Liparis Loeselii* (L.) Richard, one of the rarer orchids from the dunes of Indiana, Dr. C. E. Hellmayr; 2 herbarium specimens of *Euphorbia Esula* L., a species new to Elgin, Illinois, Mr. C. F. Gronemann; 15 herbarium specimens of palm grown from seed furnished by the Museum, Garfield Park Conservatory, Chicago; 2 herbarium specimens of *Polygonum Sieboldii* Fries, the first material in the herbarium of this frequently cultivated Asiatic ornamental, courtesy of Mrs. Stanley Field; 1 herbarium specimen of a hybrid pigweed, *Ambrosia bidentata* x *trifida*, Mr. O. C. Durham, Swan-Myers Company, Indianapolis; 1 Florida specimen of *Pterospermum acerifolium* Willd., the first representation





VARIETIES OF AGATE  
Hall 84

in the herbarium of this cultivated tree; 2 herbarium specimens of *Bidens bidentoides* (L.) Britton from Maryland, Dr. S. F. Blake, United States National Museum; 1 specimen of palmetto collected in British Honduras, Professor Samuel J. Record, Yale University; seeds and fruits of ten various palms from Trinidad, Dr. B. E. Dahlgren; a vine of *Lonchocarpus densiflorus*, collected in British Guiana, Mr. W. J. McGill, Whiting, Indiana; and a specimen of *Dioon spinulosum*, received from Garfield Park Conservatory, Chicago.

In addition to the Central American woods donated by Professor Record, already mentioned, some other important material has been acquired for the wood collections. Twelve large panels of African and American mahogany were given by the Mahogany Association of New York City. To the Florida woods were added a specimen of *Bauhinia tomentosa*, collected and presented by Mr. Jens Jensen, Ravinia, Illinois, and a section of a large cocopal trunk from Mr. F. Gerry Curtis of Miami. A piece of olive wood was given by the Glendora Chamber of Commerce, Glendora, California. The American Walnut Association, through its secretary, Mr. G. N. Lamb, supplied two specimens for the improvement of the walnut exhibit, as well as one each of cherry and hackberry. Mr. W. E. Bletsch of Highland Park, Illinois, an Associate Member of the Museum who has a private collection of domestic and foreign woods, presented the Department with 18 Cuban and Australian specimens for the reference collection.

The Boise-Payette Lumber Company of Boise, Idaho, through the courtesy of Mr. F. W. Hewitt, District Sales-Manager of the Weyerhaeuser Sales Company, donated four boards of western yellow pine (*Pinus ponderosa*) hitherto lacking in the American Wood Hall. Mr. Macbride, at whose personal solicitation this gift was made, at the same time secured in Idaho a fruiting branch of this tree for the herbarium and for use in connection with the exhibits.

The Rakuda Wood Products Company, Pittsburgh, donated two veneered pieces of "Rakuda" or sand-box wood (*Hura crepitans*) from Surinam.

The material on fibers has been enhanced by gifts of flax fiber, grown in Holland, from Mr. John Van Keppel, Harvey, Illinois, and by a specimen of *Raphia ruffia*, grown in Madagascar, obtained by the Captain Marshall Field Madagascar Expedition.

Accessions for the exhibit of plant food products (Hall 25) during the year include 16 samples of beet sugar factory products from the Great Western Sugar Company, Fort Collins, Colorado.

The collection of grain was enlarged by a number of gifts of corn, wheat, barley, rice and rye. Six ears of Yellow Cuban Flint corn grown in Florida were sent by Mr. J. M. Rogers, Gainesville, Florida; 6 ears of Leaming corn and 6 ears of Clarage corn, both grown in Ohio, came from Mr. M. F. Meyers, Ohio State University, Columbus, Ohio; 6 ears of Krug corn and 6 ears of Reid Yellow Dent corn, both grown in Illinois, were sent by Mr. George C. Dungan, Agricultural Experiment Station, University of Illinois, Urbana, Illinois; a large bunch of rye stalks, collected in western Canada, was given by Mr. E. R. Bruce, Canadian Pacific Railway, Montreal, Canada; 5 samples of Rivet wheat grain arrived from Sir John Percival, Berks, England; 7 trays containing United States government grain standards were obtained from Mr. O. F. Phillips, United States Bureau of Agricultural Economics, Chicago; Mr. Phillips is also the donor of 2 bona fide samples of the grains of Blue Stem wheat and Kitchener wheat; 5 specimens of matured rice stalks and rice grain came from the Louisiana station of the United States Department of Agriculture; heads of 15 species of barley were given by the Bureau of Plant Industry, United States Department of Agriculture.

The material received in exchange during the year consisted of 3,972 herbarium specimens. The majority of these were sent by the United States National Museum, Washington, D. C., in five shipments comprising 3,019 sheets. More than 2,000 of these are mounted duplicates of the greatest value and were sent through the personal interest of Dr. Paul C. Standley. They are chiefly Mexican and Central and South American plants which most desirably augment the Museum collections from that part of the world. Other institutions or individuals sending specimens in exchange were the Botanische Garten und Museum, Berlin-Dahlem, Germany, 20 representatives of co-types of the Weberbauer Peruvian collections on deposit at Berlin, a valuable exchange recorded with appreciation; the Gray Herbarium, Cambridge, Massachusetts, 7 Chilean plants new to this herbarium, courtesy Dr. I. M. Johnston; the same institution also forwarded 111 Newfoundland specimens, courtesy Professor M. L. Fernald, an important set, rich in this author's own species; Imperial Forestry Institute, Oxford, England, Dr. J. Burt Davy, 94 herbarium specimens of interesting woody plants; University of California, 125 desirable North American specimens; Frère Marie Victorin, Laboratoire de Botanique, Université de Montreal, 262 herbarium specimens of rare or little known

Quebec plants; 3 specimens of palm seeds from Madagascar, sent by the Station Agricole of Tamatave.

The accessions of the herbarium credited to expeditions are as follows:

Dr. A. Weberbauer collected 587 specimens in extreme northern Peru under the Captain Marshall Field Fund, in continuation of the botanical exploration work commenced in 1922. Further details regarding this accession are given under the heading Expeditions.

Miss Frances Ames of the Borden-Field Museum Alaska-Arctic Expedition collected 107 well prepared specimens of Alaskan plants.

Associate Curator of Geology H. W. Nichols and Mr. H. Eggers secured 14 plant specimens from high altitudes in the Chilean Andes on the Captain Marshall Field Brazilian Expedition.

Mr. C. S. Sewall and Assistant Curator A. C. Weed of the Rawson-MacMillan Subarctic Expedition of Field Museum obtained 446 specimens in 1926 and Mr. Sewall secured 256 plants from Labrador in 1927.

Associate Curator of Paleontology Elmer S. Riggs contributed 29 plants collected by him in Argentina during 1925-1927 on the Captain Marshall Field Paleontological Expedition to Argentina and Bolivia.

The Captain Marshall Field Madagascar Expedition contributed a specimen of *Raphia ruffia*.

Professor S. Langdon of Oxford University secured on the Field Museum-Oxford University Joint Expedition to Mesopotamia some ancient wheat kernels found in a painted jar excavated at Jemdet Nasr.

As usual, the yearly purchases were of collections either significant because of the rarity of the plants or their inadequate representation in the herbarium. For such reasons 121 specimens, partly consisting of packets of seeds, of British West Indian woody plants were purchased from Mr. W. E. Broadway, Port of Spain, Trinidad, British West Indies.

The purchases of the year added a number of very much desired collections from tropical parts of the world and especially from South America. Among the most noteworthy may be mentioned 500 sheets of Brazilian plants prepared by the famous collector, Dusén, a most important acquisition; 700 herbarium specimens collected by Mr. Carlos Schunke of La Merced, Peru, from the foothills of the eastern Andes, a region more tropical and Amazonian in character of vege-

tation than Andean, but nevertheless a collection that ultimately will be of scientific value when a more complete knowledge of the sub-tropical flora of the region makes practical its critical study; 438 Haitian specimens collected by Mr. E. C. Leonard of the United States National Museum; 470 Chilean plants collected by Dr. E. Werderman, in continuation of his botanical explorations of that country; 197 New Guinea specimens collected by Mr. R. Schlechter, an important series; 150 Bolivian plants collected by Mr. J. Steinbach; 600 sheets of Michigan and Illinois flora collected by Dr. H. R. Clayberg, useful in building up the local herbarium; 330 Washington plants collected by Mr. J. M. Grant; 1,000 Oregon plants collected by Professor M. E. Peck, and 390 from California and other states collected by Mr. A. A. Heller; 229 specimens from Uruguay collected by Dr. G. Herter, in continuation of recent collections; 100 Mexican Gulf Coast plants collected by Mr. F. C. Seymour; 50 cryptogams, continuing a series from Mr. G. K. Merrill.

GEOLOGY.—Accessions were received by the Department of Geology during the year from 55 different individuals and institutions. Of these, 44 were received by gift, three by exchange, three by purchase and five from Museum expeditions. The total number of new specimens received and catalogued from these accessions was 1,391. Of these, 1,031 were from Museum expeditions, the remainder from gifts, exchanges and purchases. Among the gifts, Mr. William J. Chalmers gave evidence of continued generous interest by enlarging the collection of crystallized minerals by the gift of 63 specimens. These are all of fine quality and represent both a number of rare species and new localities. Some of the specimens in this series, such as orthoclase from Madagascar and spodumene from California, were of gem quality and illustrate the use of these minerals for gem purposes. Some of the rarer species also represented in the specimens presented are: argento-jarosite, Utah; benitoite, California; demantoid, Italy; eosphorite, Maine; eudialyte, Kola Peninsula; hillebrandite, Mexico; melilite, Mexico; purpurite, Maine; crystallized rose quartz, Maine. One of the specimens presented by Mr. Chalmers is of unusual size and beauty. It consists of seven large crystals of tourmaline of the "watermelon" type enclosed in a matrix of quartz. Several small donations from individuals afforded appreciable additions to the Higinbotham Hall collections. Among these were a fine specimen of rainbow quartz and another of phantom quartz from Mr. Francis M. Arnold. A pendant of polished amber containing a fossil spider, presented by

Mr. S. C. Simms, attractively illustrates the use of this material in jewelry. Miss Ellen H. Douglass presented a beautiful set of carved pink coral consisting of bracelet, breastpin, and earrings. They are of value not only for the unusually fine quality of the coral, but also for the beauty of the design and the skill with which it has been executed. These were cut in Italy in 1850. Several specimens of polished jasper, kinradite and chrysoprase presented by Mr. William B. Pitts, are also interesting additions to the exhibit of semi-precious stones. A series of nineteen photographs given by Mr. A. K. Coomaraswamy, affords interesting illustrations of the methods of gem mining in Ceylon.

Through the Imperial Japanese Commission to the Philadelphia Sesquicentennial Exposition the Association of Mine Owners, Tokyo, Japan, presented 26 specimens of the gold, silver, copper, tungsten and iron ores of Japan. The specimens are from representative Japanese localities and are of sufficiently large size so that they fully illustrate the nature of the occurrences. They help to fill a gap in the ore collections, as the ores of Japan had hitherto been but little represented here. Mr. George H. Adamson presented a specimen of metallic beryllium which well illustrates the properties of this rarely prepared substance. A large specimen of oil sand, weighing 450 pounds, and measuring 36x24x14 inches, obtained from an oil-bearing stratum at a depth of 110 feet at Electra, Texas, and believed to be one of the largest specimens of oil-bearing sand ever mined, was presented by Mr. Roy B. Jones. The Standard Oil Company (Indiana) added to the specimens of petroleum products which they had previously presented, four specimens of wax, 51 specimens of decorative candles and 20 specimens of refined oils. While some of these specimens were furnished for the purpose of replacing similar products which had deteriorated, the greater part represent new products which have important uses. A large specimen of sphagnum from Esthonia presented by Mr. Marcus Stow Hill illustrates the material from which the great beds of peat spread over thousands of acres in that country are chiefly formed. From the United States National Museum, a large and important series of fossil plants was received by exchange. This series numbered 251 specimens. Through the courtesy of the National Museum, Dr. Dahlgren was permitted to select for this exchange such specimens as showed especially well features desirable as models in making restorations of the flora of that period. Many of the specimens furnished were of large size and show in detail the characters of the



leading plant groups of the Carboniferous period. Another valuable feature of this accession consists in the fact that all specimens are fully labelled as to genus, species and locality, most of the identifications having been made by such well-known authorities as David White and the late Leo Lesquereux. Representative specimens of the very rare Cincinnati and Garraf meteorites were obtained by exchange, thus adding to the meteorite collection one new fall and an adequate specimen of one which had hitherto been imperfectly represented. A large specimen, weighing about 75 pounds, of the fossil coral *Syringopora*, was obtained by exchange from Mr. Herman Lieberz. Specimens of raw and treated "Zonolite," received by exchange from the University of Arizona, give a good representation of this interesting mineral which has been found to possess properties of commercial value.

A considerable portion of the skeleton of a *Mastodon*, including skull, tusks, lower jaws and 31 other bones and fragments was obtained by purchase from the finder. The place of find of this individual was near Rensselaer, Indiana. The skull, tusks and other characters show it to have been a young male. Of especial interest is the well-preserved dentition, showing the nearly worn-out milk teeth and permanent molars forming to replace them. An unusually large specimen of an ammonite of the genus *Prionotropis*, from Kansas, with the original pearly luster of the shell almost perfectly preserved, was also obtained by purchase. Three stalagmites of an unusual character from a cave in Italy complete the list of specimens obtained by purchase.

From Museum expeditions a considerable number of specimens was received, mostly through the arrivals of collections made at an earlier period. From the Third Asiatic Expedition of the American Museum of Natural History with Field Museum cooperating, 94 specimens of vertebrate fossils which had been prepared and identified by courtesy of the American Museum of Natural History were received. These specimens were from Mongolia and Szechuen, China. They include 38 specimens of fossil Glires, 28 specimens of fossil Artiodactyls, 16 specimens of fossil Perissodactyls, 2 specimens fossil Insectivora, 3 specimens fossil Notoungulata, 4 specimens fossil Carnivora and 3 specimens fossil Proboscidea. There were also received from the American Museum of Natural History's Mongolian collections a number of fragments of the shells of eggs of *Protoceratops* and of another dinosaur, and of those of the giant ostrich, *Struthiolithus*. These illustrate in an interesting way the variations

of shell markings in the eggs of different species. From the collections made by the Captain Marshall Field Paleontological Expedition to Argentina, 38 boxes of fossils were received during the year. These are largely Pleistocene fossils of the Pampean formations and represent 61 field numbers. They include nearly complete skeletons of the great ground sloths *Glossotherium*, *Scelidodon* and *Megatherium* and less complete ones of *Glyptodon*, the saber-tooth tiger, South American *Mastodon*, and of fossil horses, llamas and rodents.

The remainder of the specimens collected by Associate Curator Nichols as a member of the Captain Marshall Field Brazilian Expedition of 1926 were received during the year. These totalled 308 specimens, chiefly from localities in Chile and Bolivia. The specimens from Chile include the following: a suite of specimens from the remarkable iron mountain mined by an American company at Tofo; an exceptionally complete series of ores and rocks from the large porphyry copper deposit at Poterillos, as well as invertebrate fossils which occur in the vicinity; numerous specimens of brilliantly colored copper minerals from the important copper mines at Chuquicamata, seldom found elsewhere as they are of such a nature that they can exist only in a desert country; specimens from the Chilean nitrate fields which include several varieties of the nitrates and of the interesting associated minerals and guanos; sulphur from Chilean volcanoes, borax from lakes whose waters are impregnated with emanations from the volcanoes, and native alums, which result from the action of volcanic gases and waters upon the lavas; a variety of ores from smaller mines of the same region; a series of specimens illustrating such desert phenomena as desert varnish, sand-polished pebbles and salt incrustations; and among the latter, of special interest, a cake of salt about two inches thick which shows a small plant growing through it. The collections from Bolivia consist largely of ores and minerals from the large tin deposits at Caracolles and Atocha and the rich tin and silver mines of Oruro, Llallagua and Potosi. Besides the ores, this series includes many choice mineral specimens. Such complete collections of choice specimens were made possible by the hearty cooperation of the Chilean and Bolivian representatives of Guggenheim Brothers and the Anaconda Copper Company.

Sixty specimens of minerals and rocks were collected by the Curator in Maine. These specimens include a crystal of beryl one foot in diameter, several crystals of the so-called "watermelon"

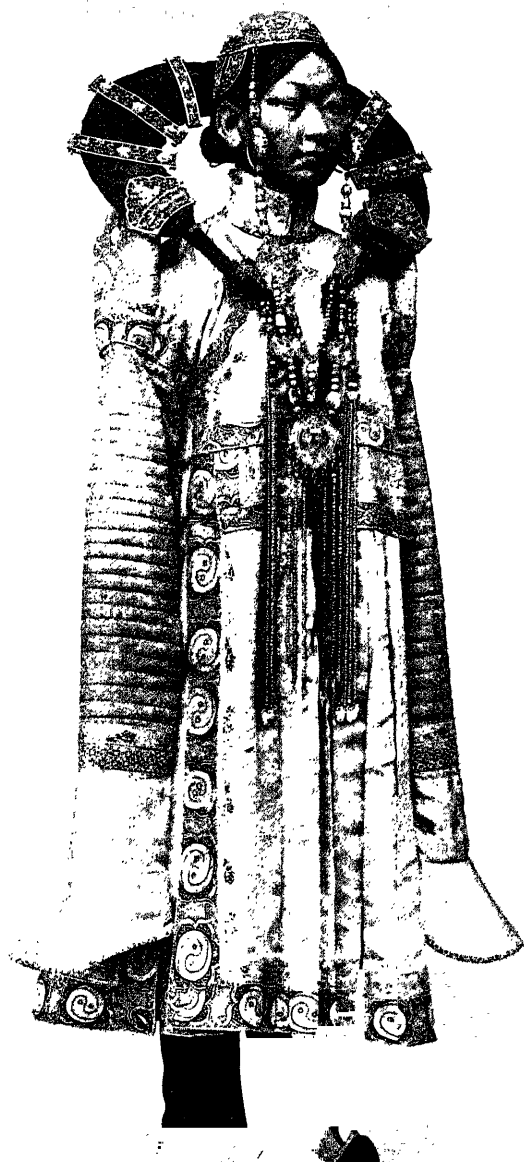
tourmalines, crystallized spodumene and orthoclase and some massive topaz.

From the Captain Marshall Field Expedition to Madagascar there was received for the gem collection a mass of transparent, green aquamarine weighing 4,770 carats. This is all of gem quality and if cut as a single stone would undoubtedly afford one of the largest gem aquamarines known.

ZOOLOGY.—Zoological specimens were accessioned to the number of 14,684 as against 14,689 in 1926 and 11,453 in 1925. The proportion of vertebrates is unusually large, and the total for these is 13,386. The accessions are divided as follows:

Mammals, 2,903; birds, 3,666; bird's eggs, 14; fishes, 4,012; reptiles and amphibians, 2,791; skeletons, 22; insects, 1,094; mollusks, 204. The number obtained by museum expeditions is 12,555 and the number by gift is 1,249.

Among the gifts of mammals are two specimens of the Scottish Red Deer and the head of a so-called "Cromie," a peculiar variant of the Red Deer found mainly or exclusively on the island of Jura, Scotland. These were obtained through the interest and generosity of Lord Astor. A Black Rhinoceros skin from Tanganyika Territory, Africa, presented by Mr. John Wentworth of Chicago, is one of the year's outstanding gifts. An important and valuable gift of mammals was made by Mr. Harold A. White of New York, who was for a few days in touch with the Abyssinian Expedition while in the field. It comprises a number of Abyssinian mammals, 8 Mountain Nyalas, including one large male with horns nearly of record size, 6 Black Bushbucks, 2 Abyssinian Duikers, 1 Oribi, 1 Abyssinian Wolf, and the skull of an Aard Vark. Other gifts of mammals include 2 Chinchillas, presented by Mr. M. F. Chapman of Inglewood, California; a rare West African Pigmy Antelope, from Miss Josephine Hammond of Wheaton, Illinois; and the skull of a Least Weasel, representing the first record of that animal from Illinois, from Mr. Tappan Gregory of Chicago. Large and important accessions of mammals were received from various museum expeditions, detailed account of which is given elsewhere. Among the most noteworthy individual specimens was the fine White Rhinoceros secured by the Conover-Everard African Expedition, which also obtained many smaller mammals new to the Museum's collections. Among these was an exceptionally large example of the Yellow-backed Duiker, a series of the antelope known as the Lechwe, and besides many small



CEREMONIAL SILK DRESS OF MONGOL WOMAN FROM URGA

Complete with jewelry studded with turquoise and coral

Presented by Mrs. Charles B. Goodspeed, 1927

Modeling of head by John G. Prasuhn

West Gallery (Hall 84)



rodents, a wide variety of the insectivorous mammals called elephant shrews. The Captain Marshall Field Brazilian Expedition extended its field into Paraguay, Uruguay and Argentina, obtaining material for four groups of large mammals, and important series of smaller animals including much needed representatives of species discovered there by Darwin but not duplicated since in any American museum. The largest single accession of mammals came from the Field Museum-Chicago Daily News Abyssinian Expedition with a total of 1,339 specimens, constituting by far the largest existing collection from this region. Outstanding large mammals included are the Mountain Nyala, Abyssinian Ibex, Abyssinian Red Wolf, Gelada Baboon, Grevy's Zebra, Defassa Waterbuck and Northern Roan Antelope. The collection of smaller mammals is practically exhaustive for the localities visited, and preliminary examination indicates that careful study will reveal a number of heretofore unknown species. The Borden-Field Museum Alaska-Arctic Expedition yielded exceptionally fine material for a group of the gigantic Alaska Brown Bear, and also obtained fine specimens of the Polar Bear, the Pacific Walrus, and the Bearded Seal. Additional specimens of the Alaska Brown Bear were obtained by the Alexander H. Revell-Field Museum Alaskan Expedition. A further consignment of 270 mammals from Asia was received from the Third Asiatic Expedition of the American Museum of Natural History. Through the kind cooperation of Colonel J. C. Faunthorpe, 36 large mammals from India were obtained for proposed habitat groups. An important exchange with the British Museum resulted in the accession of 297 specimens of small and medium-sized mammals from Asia, Africa and South America, mostly belonging to species not heretofore represented in American museums. In all, the accessions of mammals for the year are gratifying both in point of numbers and in quality. They represent an increase in the entire collection of about ten per cent.

Mr. C. Suydam Cutting of New York made a unique and highly prized gift consisting of 108 paintings and field studies of birds and mammals made by the late Louis Agassiz Fuertes in Abyssinia. Thanks are also due to Mrs. Margaret Sumner Fuertes for offering the first option on this valuable collection to Mr. Cutting for the purpose of presentation to the Museum. The careful studies made directly from nature in the field are of much scientific value, and the many finished paintings represent the latest and perhaps the finest examples of the artist's work, altogether furnishing a most interesting

and priceless adjunct to the large collections of Abyssinian animals now possessed by the Museum. Mr. Cutting also presented some 8,000 feet of finished motion picture film taken by himself in Abyssinia.

Accessions of birds were principally from Museum expeditions. Out of 3,664 birdskins or birds in the flesh which were accessions, 3,348 came from expeditions. The largest accession, consisting of 2,090 specimens, was from the Field Museum-Chicago Daily News Abyssinian Expedition. This collection is widely representative, and is the most important single lot of African birds ever received at the Museum. It contains many rarities and novelties, a full enumeration of which will be possible only after detailed study. African birds to the number of 905, exclusive of those deposited in the Conover collection, were obtained by the Conover-Everard Expedition. The Borden-Field Museum Alaska-Arctic Expedition secured 111 birds, mostly water birds especially selected and prepared for exhibition purposes. Among the 526 birds collected by the Captain Marshall Field Brazilian Expedition was one of great rarity, a small bird known as a Reed Runner (*Limnortites rectirostris*) and often referred to as "Darwin's Lost Bird" because Darwin's original specimens, discovered some 75 years ago, had never been duplicated. Another rare South American bird, a racket-tailed hummingbird (*Loddigesia*) was obtained by exchange. The Conover collection of game birds, deposited in the Museum, received numerous additions during the year, and has now reached a total of more than 6,000 specimens belonging to some 700 species. Its relative size is measured by the fact that in most general collections of birds the proportion of game birds is only about five per cent.

The total accessions of reptiles and amphibians amount to 2,791 specimens, of which 474 were gifts, 59 were received in exchange, 216 were purchased, and 2,042 were obtained by museum expeditions. Important gifts include 122 specimens from Cuba, Africa, and south-eastern Asia, from Dr. Thomas Barbour; 89 from Mr. Axel A. Olsson, Peru; 40 from Colegio San Pedro Nolasco, Santiago, Chile; 20 from Mr. Oscar Adam, Iguazu Falls, Argentina; 95 from Mr. F. J. W. Schmidt, Stanley, Wisconsin; and 44 from Mr. A. I. Ortensburger, Norman, Oklahoma. The principal purchase was of 139 specimens from Porto Rico.

The number of fishes accessioned was 4,012, of which three were gifts, one was purchased, and 4,008 were obtained by Museum expeditions. The specimen purchased was an African Lung-fish, a member

of an interesting but now very limited group of fishes, the ancestor of which are found as fossils in ancient Paleozoic rocks. As its name implies, this fish has a cellular air-bladder analogous in function to a lung. A very large proportion of the fishes received came from the Captain Marshall Field Brazilian Expedition which collected no less than 3,997 specimens, mainly in Uruguay. Although this collection has not yet been studied, cursory examination reveals that it contains many species new to the Museum's collection and otherwise very desirable.

The number of insects accessioned was 1,094, of which two were received by exchange, 482 from Museum expeditions, and 585 from various donors. Among the donations worthy of mention was a small but valuable collection of 192 gall insects and 126 insect galls which were presented by Dr. Alfred C. Kinsey. This collection is especially desirable in that it contains 35 authoritatively named species representing 111 paratypes, and the 126 galls illustrate the peculiar plant growth caused by 93 species of gall insects. From Mrs. Irma B. Coale there was received as a gift a series of 205 butterflies and moths from Japan and Paraguay. Through the Rawson-Mac-Millan Subarctic Expedition 302 insects were obtained from the eastern United States, Nova Scotia, Labrador, and Baffin Land. The Captain Marshall Field Brazilian Expedition collected 86 desirable specimens of insects in South America, and among the 58 insects from the Conover-Everard Expedition were interesting species new to the Museum's collection.

Accessions of invertebrates other than insects included 204 specimens. Of this number, an octopus was donated by Mr. George M. Kendall; 140 were shells from the northwest coast of West Australia, presented by Mr. J. F. Connelly, Perth, West Australia; and 63 were obtained by Museum expeditions.

#### DEPARTMENTAL CATALOGUING, INVENTORYING AND LABELING

**ANTHROPOLOGY.**—The work of cataloguing in the Department of Anthropology has been continued as usual during the past year, the number of catalogue cards prepared totaling 5,994.

These cards written for accessions received during the year are distributed geographically as follows: North American archaeology and ethnology, 14; Mexican, Central and South American archaeology and ethnology, 281; Australian ethnology, 439; Egyptian



archaeology, 12; Mesopotamian archaeology, 12; prehistoric archaeology of Europe, 20; archaeology and ethnology of China, Mongolia, and Japan, 24; Edward E. Ayer pewter collection, 23; physical anthropology, 24. Total, 849.

The following cards were prepared this year for accessions received previous to 1927: North American archaeology and ethnology, 204; Mexican and South American archaeology and ethnology, 1,391; African ethnology, 1,552; Egyptian archaeology, 727; prehistoric archaeology of Europe, 890; archaeology and ethnology of China, Tibet, and Borneo, 378; physical anthropology, 3. Total, 5,145.

Of the total of 5,994 catalogue cards prepared, 5,502 have been entered in the inventory books, which now number 46.

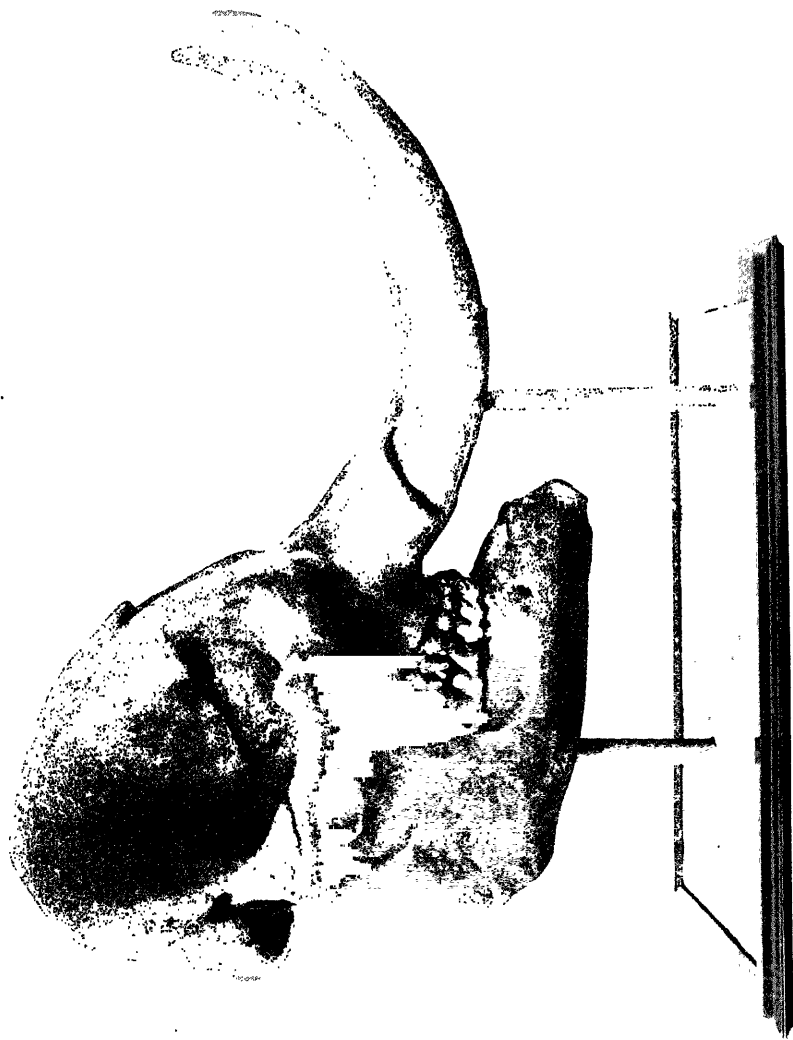
The number of annual accessions amounts to 55, of which 29 have been entered. Fifteen accessions from previous years were also entered. The total number of catalogue cards entered from the opening of the first volume is 175,307.

More than 6,000 labels for use in exhibition cases were prepared, and for the greater part installed, during the year, the number of labels supplied by the printer amounting to 6,679. These labels are distributed as follows: ethnology of Californian Indians, 2,178; Eskimo, 99; archaeology of Mexico, 73; ethnology and archaeology of South America, 1,193; archaeology of China, 450; New Guinea masks, 10; ethnology of Africa, 2,226; ethnology of Madagascar, 75; physical anthropology, 375; total 6,679.

The Department was further supplied by the printer with 7,400 catalogue cards, 4,000 identification cards for the trays and cabinets containing skulls and skeletal material, 5,000 forms for recording anthropological measurements in the field, 135 location maps for use in exhibition cases, and 1,250 case numbers. To the departmental albums 363 photographs were added.

**BOTANY.**—The new entries made in the accession catalogue of the Department of Botany numbered 8,340 during the year, bringing the total up to 570,729. The Card Index of Collectors received 138 new cards and now totals 11,159. Sixteen new geographical index cards were added, increasing the total to 3,009.

For the classified index of the specimens in the economic collections many thousand new cards were written and filed. A large part of the material in the economic reference and storage collections, hitherto identified only by catalogue numbers, was supplied with



SKULL AND JAWS OF YOUNG MALE MASTODON

Mount Ayr, Indiana

Length of skull and tusks, 5 feet. Height of skull and jaws, 33 inches

Prepared by J. B. Abbott

Ernest R. Graham Hall (Hall 38)



labels and card indexed during the year. Labels were written for some 1,500 wood specimens in the reference collection, and for about 20,000 Yucatan and other duplicates, intended for exchange, in the herbarium.

Descriptive labels were written for all new installations in the exhibition halls, and some diagrams showing chemical composition and distribution maps were prepared for various economic exhibits.

**GEOLOGY.**—The total number of specimens catalogued during the year in the Department of Geology was 2,415, making a total of 179,897 now recorded. Of those catalogued during the year, the largest number were invertebrate fossils of the Borden collection, the identification and recording of which has been continued as opportunity permitted. From this collection and some other small accessions of invertebrate fossils, 1,003 specimens were entered during the year. Another large series catalogued during 1927 was that of the entire geological collections made by the Rawson-Mac-Millan Subarctic Expedition of 1926. These numbered 580 specimens. The cataloguing of the geological collections made by the Captain Marshall Field Brazilian Expedition of 1926, numbering 308 specimens, was also completed. These were chiefly specimens from Chile and Bolivia, those obtained in Brazil and Uruguay by this expedition having been recorded in 1926. All of the specimens from this expedition entered this year were not only catalogued and numbered, but were also checked against the field notes and provided with temporary labels. Other series catalogued were those of 63 mineral specimens presented by Mr. William J. Chalmers, 60 collected by the Curator in Maine, and 103 specimens of the vertebrate fossils collected by the Captain Marshall Field Paleontological Expedition to Argentina. In order to have more complete and accurate data on hand regarding the more important gem specimens in the Higinbotham Hall collection, 120 of these were weighed and measured and the results recorded. Those so catalogued included the larger diamonds, all the emeralds, and the larger sapphires, aquamarines, beryls, topazes, amethysts, citrines, and rock crystals.

Successful efforts were made to complete the mounting in the departmental albums of the photographic prints received during the year. In this work 623 prints were classified and mounted. The larger number of these were from photographs made by the Associate Curator in South America in the previous year, or presented to him by residents of that continent. Another large series

was one of 181 prints of geological photographs made by the Rawson-MacMillan Subarctic Expedition. In most cases, all prints mounted were labeled fully. The total number of prints preserved is now 5,871, and they are mounted in 15 albums.

To the series of United States Geological Survey topographic maps on file, 82 were added during the year, making a total of 3,145 of these maps now available for reference. As in previous cases, brief descriptive labels were filed with the maps newly added to the series.

The decision that was reached early in the year to change the color of the label stock from black to buff necessitated the reprinting of many labels as exhibits were newly installed. Labels printed for this purpose and installed during the year numbered 287. These were chiefly for two cases of concretions and one of peat products. In addition, 50 miscellaneous labels were printed and installed, making a total of 307 labels. These were all that were received from the printer during the year. In some cases, where printed labels could not be furnished, temporary typewritten labels were installed. The number of these, together with those for which copy was written during the year, amounted to 584. Two descriptive labels, one for the brickyard model and one for the relief map of the Niagara river, were written. Of these, that of the brickyard model was printed and installed. A complete series of labels giving the grouping of each meteorite according to the Berwerth classification, was made for the study collection of iron meteorites, numbering 300 specimens. These labels were filed with the specimens.

**ZOOLOGY.**—Regular cataloguing of specimens in the Department of Zoology proceeded at an increased rate, but owing to the large number of accessions, much of this work remains to be done. The total number of regular entries was 9,673 as against 6,327 in 1926 and 6,079 in 1925. They were distributed as follows: mammals, 1,600; birds, 4,213; fishes, 905; reptiles and amphibians, 2,832; skeletons, 23; insects, 100.

Specimens of mammals have been numbered as catalogued so far as possible, but skulls cannot be numbered until after they are cleaned, and several thousand of these have not received numbers. Birds and mammals from museum expeditions are supplied with permanent labels by the collectors, but those from other sources require new labels. Such labels have been supplied during the year to some 2,000 birds and to a small number of mammals. Con-

siderable further work of this kind remains to be done. Labeling and numbering of reptiles and amphibians has kept pace with the accessioning of them, and is nearly up to date. On account of pressure of other work, labeling of fishes and insects has received only slight attention.

Exhibition labels were prepared and installed for five mammal groups, and for fourteen single specimens. Exhibition labels were also made for 68 paintings of birds and mammals. Black labels on seven screens of fishes were replaced by new ones of light color. Label copy was prepared for 335 species of butterflies intended for exhibition.

Photographic prints were mounted in the departmental albums to the number of 632. The total number of prints now in the albums is 7,186.

The state of the catalogues at the end of the year is as follows:

	Number of record books	Total of entries to Dec. 31, 1927	Entries during 1927	Total of cards written
Department of Anthropology . .	46	175,307	5,502	176,608
Department of Botany . . . . .	63	570,729	8,340	11,159
Department of Geology . . . . .	26	179,897	2,415	6,872
Department of Zoology . . . . .	46	134,518	9,673	40,306
Library . . . . .	16	175,262	9,146	366,082

## INSTALLATIONS, REARRANGEMENTS AND PERMANENT IMPROVEMENTS

ANTHROPOLOGY.—The activity of the Department of Anthropology during the year under review was largely centered on the completion of the California Hall, the installation of which was inaugurated last year, and the installation of African ethnology for the proposed African Hall. A total of 70 exhibition cases were installed, distributed as follows:

	Cases
Stanley Field Hall . . . . .	4
Edward E. and Emma B. Ayer Hall . . . . .	1
South America (Hall 9) . . . . .	7
Mexico (Hall 8) . . . . .	1
California (Hall 6) . . . . .	8
China . . . . .	14
Africa . . . . .	35
Total . . . . .	70

Two novel technical features have been introduced: the former black screens and black label cards with type set off in aluminum have

been abandoned, and are replaced with light-colored screens and a label card corresponding in color printed with black type. Through long experiments it has been determined that this scheme is best suited for the halls with artificial lighting. A new and better method of arranging objects on screens has also been inaugurated. Instead of spreading objects out in horizontal rows the entire length of the screen, a plan of panel arrangement has been devised by which the screen is divided, as dictated by the requirements of the exhibit, into three, four or more vertical panels, somewhat like the columns of a newspaper. In this manner it is easier to single out groups or types that belong together, or, wherever archaeological periods are involved, to accentuate developments in time sequences. Labeling and position of labels are also facilitated under this plan, and the exhibits become more "readable." Examples of this new method may be viewed in Case 12 of Stanley Field Hall and in a case of Chinese metal mirrors recently installed.

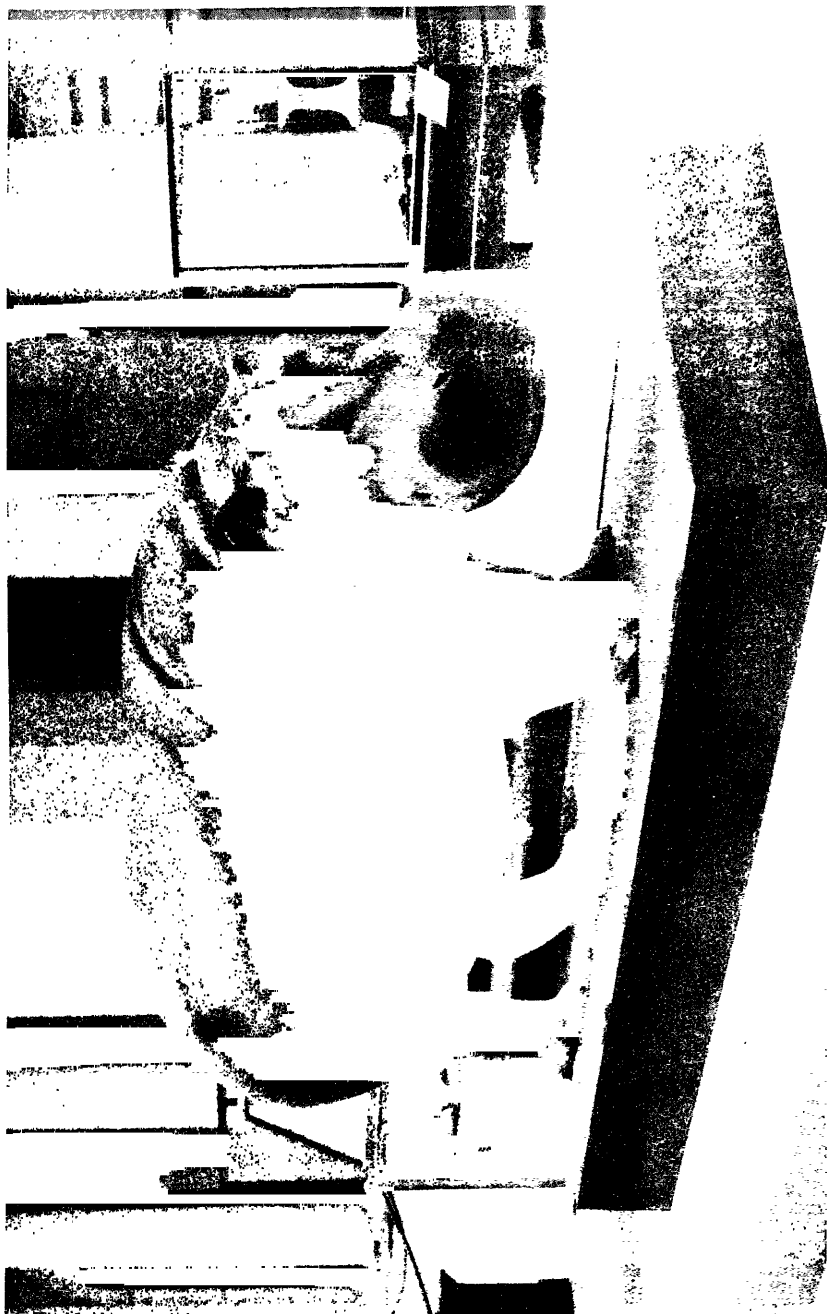
Four notable additions were made to Stanley Field Hall. A selection of 222 pieces from the collection of archaic Chinese jades presented last year by Mrs. George T. Smith, Mrs. John J. Borland, Miss K. S. Buckingham, and Messrs. Martin A. Ryerson, Julius Rosenwald, Otto C. Doering, and Martin C. Schwab, has been installed in Case 12 of Stanley Field Hall. The upper compartment has been arranged in three panels showing ceremonial swords, knives, and daggers; large disks; and ceremonial weapons. The lower compartment illustrates decorated girdle-ornaments, carvings of ox-heads, figures of tigers, hares, birds, tortoises, snake, alligator, dolphins, fishes, insects, charms, and implements, laid out in twelve panels. A gray art-linen has been chosen for mounting the background of this exhibit which is explained by 110 labels.

The Magdalenian skeleton from Cap-Blanc has been exhibited in an A-shaped case which was placed on view in Stanley Field Hall for several months. The exhibit is enlivened and rendered very instructive by a series of flint implements from the Upper Paleolithic of France and by photographs illustrating the rock-shelter where the skeleton was discovered, and the frieze of horses carved on the wall of the cave.

A selection of Mr. John Borden's Eskimo collection has been displayed in an A-shaped case in Stanley Field Hall. The exhibits embrace jade adzes from Cape Prince of Wales; jade adze-heads from Point Hope; copper arrowheads, a copper and an iron knife, and a specimen of native copper from which needles are made, from Victoria







HIPPOPOTAMUS

Reproduction in cellulose-acetate by Leon L. Walters

About one twenty-fifth natural size

Land, northern Canada; bone arrowheads and decorated bone needle-cases from the same area; four wooden masks, carved ivory drill-bows, ivory tobacco-pipes, and walrus tusks engraved with scenes; further, ivory human and animal figures, fish-hooks, harpoons, ice-picks, toggles, and toys.

At the end of the year a selection of Madagascar material brought here by Assistant Curator Linton was installed in Stanley Field Hall as a temporary exhibit. Examples are shown of the best native weaving in wild and domestic silk, bast and raffia, and a number of small objects including silver-mounted snuff-bottles from the Imerina tribe, wood-carvings of the Mahafaly tribe, brass work of the Bara tribe, and native jewelry, including a gold necklace which formerly was the property of a queen of the Sakalava in the northern part of the island. New labels on buff cards were prepared for Case 11 (antiquities of Benin) in Stanley Field Hall.

The Roman bronze table from Boscoreale with seven associated bronze vessels and two glass pitchers, formerly shown in Stanley Field Hall, has been reinstalled and placed in Edward E. and Emma B. Ayer Hall.

The reinstallation of collections from the California Indians in Hall 6 has been completed by Assistant Curator Strong according to the plan outlined in the 1926 Report (p. 79). Eight additional cases have been placed on exhibition, containing clothing, games, household utensils, baskets, fishing implements, ceremonial and war equipment of the Klamath, Hupa, Yurok, Yokut and Pomo tribes. The total number of standard exhibition cases devoted to Californian ethnology now amounts to seventeen. All these exhibits are completely labeled and illustrated by photographs.

The installation of Hall 9 devoted to South America was continued in the beginning of the year by Assistant Curator Thompson. The remainder of the Calchaqui archaeological collection from Argentina was placed on exhibition. This collection is the finest representing this culture in the United States, and, with the exception of collections in Argentina, it may be safely said, in the world. A case of Inca pottery and stone work, which for lack of space had not previously been exhibited in this building, was added to Hall 9. Very interesting material from graves at Ancon, Peru, was reinstalled on light screens. A beginning was made with the reinstallation of the ethnological section, a case containing material from British Guiana being reinstalled in the newly adopted style. This work was continued by Assistant Curator McGovern at the end of the year, who

took charge of the installation of two cases of Gran Chaco ethnology, illustrating dress, personal ornaments and equipment for securing and preparing food.

In Hall 8, now devoted exclusively to Mexican and Central American anthropology, a case of Casas Grandes pottery was placed on exhibit. Casas Grandes culture, situated in the state of Chihuahua, northern Mexico, marks a local southern development of the Pueblo cultures of the Southwest of the United States. The exhibit embraces two collections, one donated by Mr. Homer E. Sargent, the other presented to the Museum through General Pershing by Captains Wright and Cooper.

Several important additions were made to the East and West Galleries. The collection of South Chinese beadwork presented by Mrs. George T. Smith last year (1926 Report, p. 38) has been installed in a screen case. This unique collection consists of a large series of bead-embroidered money-belts, money-bags, pouches, spectacle-cases, slippers, bed-ornaments, and patterns for dresses. Archaic Chinese sacrificial bronze vessels and implements of the Bronze Age were effectively reinstalled in accordance with the newly adopted standard. To the former case has been added a series of rubbings taken by Chinese from famous ancient bronzes, at which they are unsurpassed masters. The great Chinese religious drama showing the ten purgatories formerly distributed over four cases has been installed in a built-in case at the south end of Hall 32. The entire performance is now concentrated in a single case divided into seven compartments. In Cases 32 and 33 of Hall 32 new-style labels have been substituted for the old ones. The dress of a Mongol woman with her jewelry, presented by Mrs. Charles B. Goodspeed, has been installed on a figure, and is shown together with another set of Mongol jewelry obtained by Dr. Laufer in 1910 on the Blackstone Expedition.

During the year under review 35 cases of African ethnological material have been installed by Assistant Curator Hambly. Thirteen of these cases contain the extensive Cameroon collection acquired a few years ago and now installed for the first time. The remaining cases are reinstallations, but the material contained in these was carefully gone over, sifted, and selected with discrimination. The grouping of cases is geographical, the main divisions being Cameroon (13 cases), West Africa in general (3 cases), Benin (2 cases), the Congo Basin (4 cases), Angola (1 case), Southeast Africa (4 cases), Kenya Colony (4 cases), Somaliland and the eastern Sudan (4 cases). Within these broad geographical areas the material has

been arranged according to tribes whose industries, household tasks, religious beliefs, and magical practices have been illustrated more or less completely as far as the material available permits. By exhibiting in a special case three life-size figures of Cameroon medicine-men with their equipment, prominence has been given to magical rites which are fundamental in primitive society. In the Cameroon section Cases 1 and 2 illustrate masks and wooden figures, which are closely associated with the religious life of many tribes within this area. Wooden masks and head-ornaments are indispensable paraphernalia used during ceremonial dances of secret societies, initiation lodges, and other tribal functions. Among the wooden effigies of human beings is one of particular interest, namely the doorkeeper, an image placed at the entrance to a small hut where the chief's skull is buried. In Case 3 skin-covered heads are of exceptional interest; for these, when not in use as part of a dancer's costume, are carefully concealed in small houses away from the sight of women. On the reverse side of the screen in this case have been arranged a series of articles, such as fibre costume, gong, pipe and staff, which are used by a reigning chief when celebrating the ceremony known as feeding the ghost of a former chief. In Cases 4 and 5 dealing with Cameroon warfare is displayed a variety of leather, wooden, and wicker shields. A richly carved war-canoe from Dualla is an unusual object, while ordinary equipment of men on the war-path is amply represented by a variety of swords, daggers, spears, powder-flasks, life-preserving charms, clubs, bows and arrows, and also a very ancient type of flintlock gun. Household occupations of women are exhibited in Cases 6 and 7, showing bags, baskets, wooden bowls, gourds, and pottery. This domestic material is followed by a collection of fish-traps and small cross-bows used for shooting small birds. Case 8 contains a remarkably fine collection of beadwork including large gourds which serve for holding palm-wine, personal ornaments, and grotesque masks employed in death dances for driving away ghosts. Exhibitions of wood-carving (Cases 9 and 12) comprise several excellent examples of ornamental posts, window frames, and large upright drums. Handwork of many kinds is illustrated by objects assembled in Cases 10 and 11. Here may be found clothing, woven chiefly by men who use primitive looms; pipes of clay with beaded stems; carved staffs; ivory tusks; and ornamented drinking horns. Brass casting and iron work have received special attention, while artistic leather goods are exemplified by cushions, saddle-covers, and horse trappings. In proximity to the Cameroon collection are two cases of

valuable cast bronze and carved ivory illustrating the life and industries of Benin, a city which has for several centuries been as famous for its works of art as it has been notorious for human sacrifice. Material from the Congo is scanty in relation to the enormous area drained by that river, but in spite of this obvious difficulty four cases, each representing one principal culture area, have been installed. Zulu life has been represented in relation to warfare and personal ornament, while a series of well-carved staffs is an attractive feature of this exhibit. A small area near Mount Kenya, visited by Carl Akeley in 1896 and subsequent years, has been dealt with in Cases 27-30 which present the warfare, hunting, handicrafts, and domestic work of the Masai, Akikuyu, and Wandorobo tribes. Finally the nomadic life of Somaliland and the Eastern Sudan is depicted in Cases 31-34 by a collection of equipment for camels, mats used in house-building, clothing, personal ornament, spears, swords, shields, bows and quivers. This section also contains a few objects from the Dinkas and Shilluks, who are Nilotic Negroes dwelling near the banks of the Upper White Nile. All African exhibits have been illustrated by photographs, sketches, and watercolors. Owing to building alterations on the ground floor it has as yet been impossible to open the African Hall. The cases installed have been temporarily stored in the clerestories and, as soon as conditions permit, will be arranged in the hall assigned to them.

The collection of Japanese Surimono in Frank W. Gunsaulus Hall, a gift of Miss Helen C. Gunsaulus, was withdrawn from exhibition in the latter part of the year. As the coloring of these prints is of great delicacy and the pigments are apt to fade in course of time, it has been thought advisable in the interest of their preservation not to expose them any longer to the hazards of daylight. Four large portfolios have been specially made for these prints which are now kept in the Curator's office, where they are accessible to students interested in the subject.

Four cases in Higinbotham Hall (Gem Room) were cleaned, and the exhibits rearranged.

Material in the Room of Physical Anthropology has been definitely arranged and classified. Each row of cabinets has been provided with printed labels framed under glass specifying the geographical area and tribes involved.

A study room for the use of students has been made available in Room 39. It is well furnished with large working-tables and well lighted. The walls are lined by exhibition cases in which is displayed

selected material from all parts of the world, with special regard to the needs of designers. They will find here neat baskets of the American Indians, Mexican and Chinese pottery, Chinese bronzes, wood-carvings from Africa and Australia, and many other things. A series of skulls and skeletal material, and measuring instruments, are likewise accessible in the room. The study room was frequented chiefly by students of physical anthropology such as Professor F. E. Wood who made a thorough study of Philippine and Peruvian skulls; Dr. H. Gray from the Institute of Juvenile Research, who studied problems of head heights; Dr. T. Michelson of the Bureau of American Ethnology, who made a series of measurements upon Blackfoot crania; Dr. G. Bergfors of the Swedish Race-biological Institute at the University of Upsala, who studied the Polynesian collections of skulls; and Dr. G. A. Montelius, head of the Department of Dentistry at the University of Minnesota, who examined Hopi skulls with special reference to teeth. Copies of all measurements and observations made by these scholars have been retained on the departmental files.

The arrangement of the ancient Egyptian and Coptic textiles obtained for the Museum by Professor James H. Breasted in 1925 proved a complex task. As received from Egypt, the fabrics were mostly mounted on cardboard, and pieces that belong together had been frequently split up to make more units. Even when fragments of the same garment had been left together, they were in many cases assembled in quite hit-and-miss fashion. These fragments therefore had to be matched and rearranged to show the original make-up of the costumes from which they came. For better preservation, as well as to effect the necessary rearrangement, all fabrics and garments are being mounted on linen by a skillful seamstress engaged for this task.

Material in all work-rooms and storage-rooms has been rearranged, and conditions improved. Room 30 has been cleared and set aside for study collections of African ethnology. Collections from India, Burma, and Ceylon were consolidated in Room 31. Room 66 was cleared, a new storage rack added to it, and it is now used for American Indian baskets. Material in Room 65 was rearranged; it now contains Chinese, Tibetan, Kish, and Egyptian antiquities. Rearrangements were likewise made in the Poison Room on the fourth floor.

Thirteen frames were made for Chinese paintings, and these were framed under glass; one frame was made for a large wall-map of Africa to be posted in the African Hall.

Considerable progress has been made by Modeler Prasuhn on a miniature group of a Menangkabau village of Sumatra. Six granaries with elaborate carved and colored designs and a large community house were completed for this group. A head was modeled and cast for the figure of a Mongol woman, and four life-size casts were made for the huge New Guinea dance-masks to be shown in Stanley Field Hall. Modeler Prasuhn also took part in the electro-chemical treatment of bronzes.

In the Repair Section of the Department 396 objects were repaired or restored as follows: 9 pieces of painted pottery and 38 pieces of plain pottery, bone, and stone from Kish; 197 pieces of Peruvian, 21 pieces of Calchaqui, and 155 pieces of Mexican pottery; 6 Chinese paintings, 33 Chinese bronzes and jades, 2 Tibetan statues, 8 objects of pewter, 3 Roman bronzes and 1 Egyptian alabaster vase; of ethnological material 27 African, 16 South American, and 12 Madagascar objects; and 8 bones.

Seven Egyptian bronze figures and one Calchaqui bronze axe were cured of malignant patina, and 24 Egyptian fabrics were treated. A Chinese bronze vessel affected by malignant patina was restored by means of the electro-chemical process. A total of 10,910 identification numbers were marked on specimens. Forty-five exhibition cases were poisoned during the year. Material stored in the Poison Room was taken care of in the usual manner, and is in excellent condition.

**BOTANY.**—In 1927 new interest was added to the exhibit of native plants in Stanley Field Hall by the support of the Wild Flower Preservation Society. This organization, which had given its endorsement to the undertaking during previous seasons, this year contributed financial aid. The Society, through its treasurer, Miss C. B. Neely, took an active interest by way of encouragement and helpful suggestions with the result that the exhibit was maintained by the Assistant Curator of Taxonomy even more successfully than during 1924 and 1926, as described and illustrated in the Annual Reports for those years. Among the several thousand specimens exhibited, representing about 300 species of wild flowers found within a radius of 50 miles of the city limits, special mention may be made of such rarities (for the district) as the Pitcher Plant, the White, Yellow and Showy Lady's Slipper, the Grass Pink and Pogonia, three species of Fringed Orchids, Ladies' Tresses, the Cranberry plant in fruit, the curious Indian Pipe and the related red-colored Pine Drops—all worth knowing by their common

names at least. That the exhibit served as a means of interesting city children and their parents in our native plants was obvious from the attention it attracted and the inquiries it prompted. A widespread interest in our native plants is a prerequisite to the success of all efforts to secure their conservation. Many of the rarer species were replaced where collected, in most cases on private property. Special thanks in this connection is due to Mr. Ralph B. Bradford and Miss Mary Bremer, Gary, Indiana, owners of Dune Forest, Porter, Indiana, and to Mr. William A. Wirts and his associates, Mr. A. P. Melton and Mr. C. R. Kuss, proprietors of Dunes Acres, Inc., at Mineral Springs, Indiana. The latter property, especially, harbors certain species found nowhere else in the vicinity of Chicago, and the private club that owns it is to be congratulated on conserving the natural vegetation.

Some hundreds of labels printed during the year have been placed, and many new specimens have been added to the exhibits. The most important single new exhibit is a Tucum Palm from Dutch Guiana, secured by the Stanley Field Guiana Expedition of 1922. This well-preserved dried specimen has found a place in a special case in the center of Hall 25. It consists of essentially the entire top of the tree with its crown of spiny leaves among which may be seen an unopened flower spadix and a cluster of fruit projecting in characteristic fashion. The terminal part of the leaves has had to be cut away for economy of space, but what remains of them gives a good idea of their appearance. The striking feature of this palm is its armament of spines which covers every part of the plant except the fruits, and appears particularly formidable on the trunk, of which a five-foot length is displayed.

A large number of palm specimens obtained by the Captain Marshall Field Brazilian Expedition of 1926 have been added during the year to the exhibits in this hall. Notable among them are fruit-clusters of a Brazilian *Iriartea*, of some *Attaleas*, *Scheeleas*, *Pseudococos*, as well as many specimens of palms foreign to Brazil but grown in the Botanic Garden of Rio de Janeiro and obtained through the courtesy of its Director, Dr. Pacheco Leão, by members of the Captain Marshall Field Expedition.

Two well-preserved flowering and fruiting stems of a Nipa Palm, secured from the Georgetown Botanic Garden, are to be credited to the Stanley Field Guiana Expedition. These have been installed in a case together with a fine series of specimens of the Ivory-nut Palm brought together from various places.



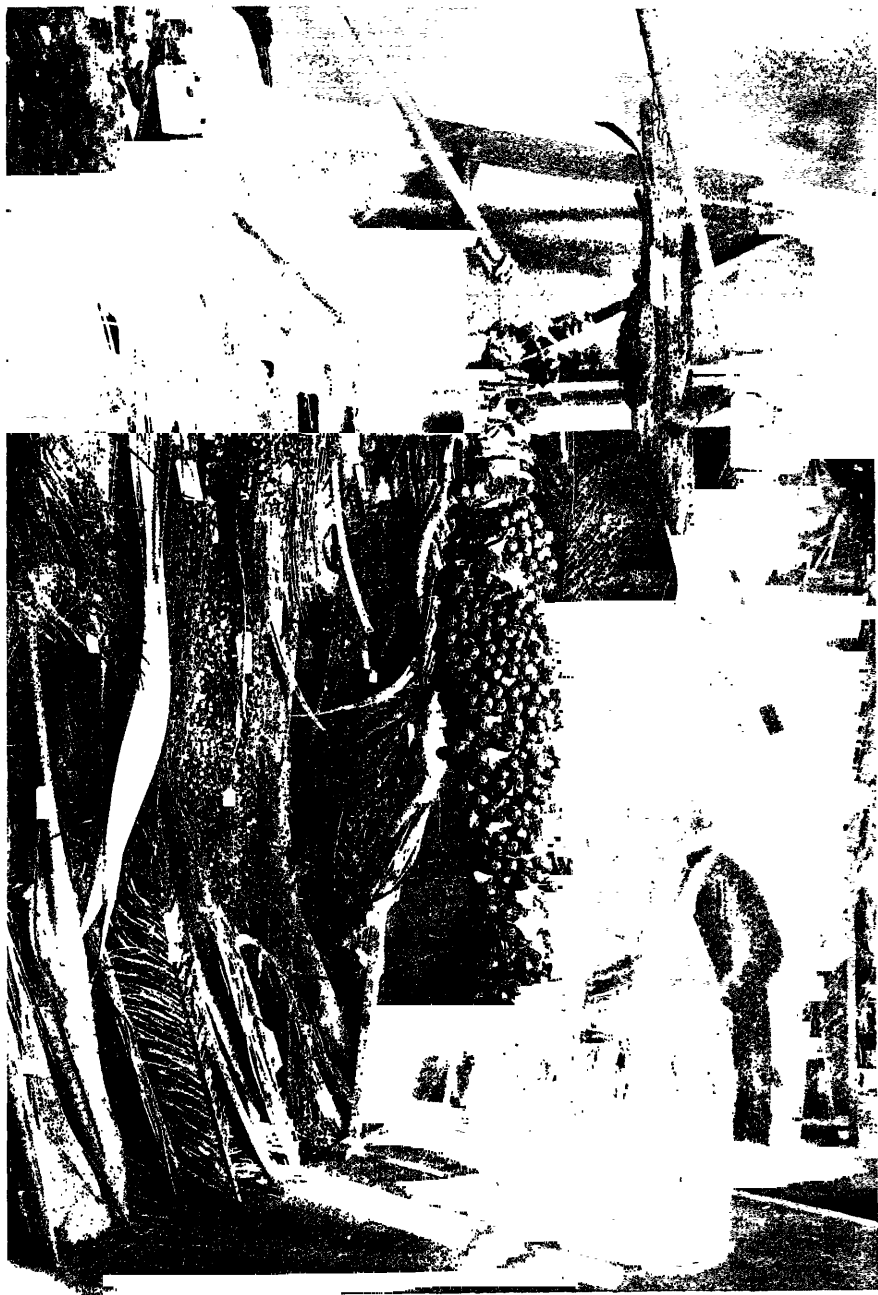
Among other additions of palm exhibits installed during the year is a fine reproduction of a mature cluster of the fruit of the Betel Palm, the kernels of which furnish the well-known masticatory "betel nut." The original of this was grown in Paramaribo, Surinam, where the Javanese element introduced by the Dutch is responsible for the frequent planting of the palm.

In the Hall of Plant Life a number of other installations have been made, and some reinstallations have been made possible by the addition of new material resulting for the most part from the reproduction of various plants and the preparation of other specimens in the Stanley Field Plant Reproduction Laboratories, partly based on collections made by the Captain Marshall Field Brazilian Expedition of 1926, and partly on local material secured near Chicago.

A preserved branch of the South American *Araucaria imbricata* obtained during the previous year has made possible a reinstallation of the *Araucaria* case and a better display of the essential characteristics of this group of plants. The nature of the material permits the use of actual dried specimens for exhibition. Unfortunately the number of plants that need little preparation for their display is very limited.

Among the plants reproduced for the Hall of Plant Life, one of the most important during the year is a characteristic piece of Black Pepper vine in fruit. This was grown in the Botanic Garden of Rio de Janeiro where it was obtained, though of East Indian origin. Molds of the fresh leaves, color studies and photographs made on the spot, together with a section of the vine preserved in formalin solution, served as material for the production of a replica of the living plant in the Stanley Field Plant Reproduction Laboratories.

A young cinnamon plant, likewise secured in Rio de Janeiro, was reproduced and added to the case containing the laurel family. A reproduction of a handsome flowering branch of the well-known *Sanchezia nobilis*, the "folha da independencia" native to Ecuador, one of the most striking of the Acanthaceae of tropical South America, was added in the space reserved for this family. A reproduction of Cassava or Mandioca plant, based on material also secured in South America, was not completed in time to be installed during the year. To the exhibit of Cucurbitaceae, the Cucumber or Gourd family, was added a piece of the vine of *Trichosanthes anguina* with its extraordinary snake-like orange and red fruits, this from a specimen grown in the Garfield Park Greenhouses. A branch of Sugar Maple reproduced during the year served as the occasion for the addition of the



SAGO PALM FRUITS

A fruit-cluster of an East Indian palm grown in the Botanic Garden of Rio de Janeiro  
Obtained by Captain Marshall Field Brazilian Expedition, 1926  
One twenty-fourth natural size



maple family to those already in the hall. A specimen of Venus Fly-Trap, *Dionaea muscipula*, was secured in season and reproduced for the exhibits; likewise the Indian Pipe, *Monotropa uniflora*.

To the generosity of Mr. Pray of the Department of Zoology are due several contributions during the year to the exhibit of fleshy fungi—viz., reproductions of an Ink Cap Mushroom, a Polypore and a Clitocybe, all common species in the Chicago region. The Department of Botany desires to record its indebtedness to Mr. Pray and its appreciation of his interest in fungi.

One of the most notable single exhibits produced during the year is a group of epiphytic and parasitic plants which may be described as an aerial or treetop garden. It consists of a typical cluster of epiphytes from Demerara, a perching young strangler fig growing in the midst of a clump of large air plants or Bromeliads (*Aechmea*), together with a flat-jointed cactus (*Rhipsalis*), an orchid (*Dendrobium*) and an aroid, the whole further complicated by the presence of a tropical mistle (*Loranthus*), while about the entire clump a colony of white ants or termites have built their arboreal nest. This was based on material and data secured by the Stanley Field, Guiana Expedition and has been placed on exhibition in Stanley Field Hall.

The output of plant reproductions for the botanical exhibits suffered somewhat early in the year by the employment for some time of almost the entire force of the Stanley Field Plant Reproduction Laboratories on parts for a small scale model for the Carboniferous Forest group which has been undertaken for the north end of the Hall of Historical Geology.

In connection with the plans for the ecological groups to be placed in the two ends of the Hall of Plant Life, the Acting Curator, accompanied by Mr. Sella, visited the Snow Mountains in Wyoming for the purpose of locating a suitable and convenient collecting ground and to secure material for a group of alpine vegetation. This locality was suggested by Professor Nelson of the University of Wyoming. The trip was made late in the season, but a considerable number of alpine plants were still available and were collected. These furnish material for a beginning on this group, and the reproduction of these has occupied much of the glassblower's time during the latter part of the year. It is expected that further material and studies for this group may be obtained in the Rocky Mountains during the coming year. It is planned to represent the typical vegetation above the snow line with an alpine landscape for a background. With the assistance of Mr. Corwin a small scale model was prepared.

In the plant economics exhibits in Hall 25 a collection of heads of 37 commercial varieties of wheat grown in the United States, and corresponding samples of grain received in 1926 from the United States Bureau of Plant Industry have been placed on exhibition in a table case together with explicit labels.

Adjacent to the 37 modern commercial varieties of wheat are shown two samples of ancient wheat. One of these was found by the Field Museum-Oxford University Joint Expedition in Jemdet Nasr, Mesopotamia, in 1926. This specimen of ancient Mesopotamian wheat, estimated to be 5,500 years old, was found during excavations of Sumerian remains. The wheat was contained in a painted jar, much blackened, supposedly by the fire which destroyed the ancient city of Jemdet Nasr, which lies eighteen miles northeast of Kish and some 65 miles from the present city of Baghdad. The charred condition of the kernels and the arid climate has undoubtedly been responsible for the preservation of this wheat, the most ancient in existence.

The other ancient wheat is Egyptian. Although slightly carbonized with age, it is much better preserved than the Mesopotamian. It is also of a different kind and has been identified as emmer (*Triticum sativum dicoccum* Hackel). This wheat is about 4,600 years old, as it was found in two graves of the "Middle Kingdom" which existed about 1900 B.C. It is a gift of the Deutsche Orient-Gesellschaft. It is significant to note that both these ancient wheats are apparently identical with varieties grown today after the lapse of more than 4,000 years and a corresponding number of generations of wheat plants.

Eleven trays illustrating the official grain standards of the United States, obtained from the Bureau of Agricultural Economics, have been placed in the same table case with the commercial varieties of wheat and barley, and constitute a valuable acquisition to the economic exhibits of the museum, for Chicago is the largest wheat market in the world, and the exhibits are yearly inspected by thousands of visitors directly connected with the production of wheat and other grains. This exhibit, which has been prepared with great care, shows the standard employed in grading grain.

Fifteen commercial varieties of barley heads and grain, received from the United States Bureau of Plant Industry, have been placed on exhibition in the same case with the wheat varieties and grain standards. These represent all the main types of cultivated barley grown in this country, and their distinguishing characteristics are

noted on the labels. There may be seen among them some examples of successful results in plant breeding.

The scale model of a modern flour mill in vertical section, donated last year by the Pillsbury Flour Mill Company, has been placed on exhibition and labeled to explain the course of the grain through the mill in process of manufacture. It has been installed along with properly labeled samples illustrating the steps in the process by which the wheat grain is broken up into flour, and properly labeled specimens of the various main types of flour. Most of the flour samples used were selected from the large assortment received last year from the Red Star Milling Company of Kansas. A figure of an enlarged wheat grain serves to indicate graphically the chemical composition, and the percentage of starch, gluten, oil, etc., found in wheat grain.

The exhibit of corn which formerly occupied eight or nine cases has been reinstalled in two cases, one devoted to specimens of prehistoric and ancient corn, and corn of the North American Indians, and another showing the principal types of cultivated corn. In the former is corn which was used by the cliff dwellers, found in the ruins of the habitations of those early people in Arizona; corn of the mound builders, found in Ohio mounds; and mummy corn, from the ancient Peruvian graves at Ancon and Iquique, Peru. Alongside the ancient Inca corn is shown corresponding modern Peruvian corn, recently collected by the Captain Marshall Field Peruvian Expeditions, and the striking similarity is notable. In the same case is included some so-called pod, or reverted, corn which is sporadically encountered in cultivated fields today. Seeds of Indian corn obtained from the North American Indians includes bright pink corn grown by the Arikara tribes; blue corn grown by the Zuni; and a type in which blue, yellow and red kernels appear, known as Fort Berthold squaw corn; as well as other Indian varieties. Many of these North American Indian corns were presented last year by O. H. Will and Company, Bismarck, North Dakota. There is a hybrid corn grown at Wichert, Illinois, in which appear strains of various Indian corns, mixed with modern varieties.

Indicative of the high esteem in which corn was held by the ancient peoples of Peru, there is in the collection a stone carving of an ear of corn, found among the remains of the Inca civilization at Cuzco, and a jar, 500 years old, shaped in the form of a Peruvian god of maize or of the harvest, with round grinning face and round body, from whose neck to waist are suspended ears of corn. This jar

was found in the ruins left by the Uncay peoples in the Santo Valley of Peru. These ancient representations of corn are placed adjacent to modern Peruvian corn and show apparently no difference in appearance.

In the second case has been placed an exhibit of modern corn showing the six main types of corn cultivated today, namely: sweet corn, pop corn, starchy sweet corn, flint corn, dent corn and soft corn. Some ears of corn are shown in section, cut longitudinally and transversely to show the grains in section and in relation to the cob. Colored diagrams of kernel sections illustrate especially the characteristics of the different types. Most of the commercial corn shown is from the I. M. Thorburn Company, New York; Mr. I. M. Holder, Lawrens, Iowa; Mr. L. S. Mayer, State Experiment Station, Knoxville, Tennessee; Mr. W. H. Neal, Lebanon, Tennessee; Mr. Redfern, Yarmouth, Iowa; the State Agricultural Experiment Station, Baton Rouge, Louisiana; and Mr. F. K. Crandall, State Agricultural Experiment Station, Kingston, Rhode Island.

In a special case nearby there has been placed on exhibition a Peruvian bunch of corn, a typical small corn harvest from the Andes, collected by Mr. Macbride on the Captain Marshall Field Peruvian Expedition, 1922. One table case has been devoted to the display of a variety of products of the small grains, and kindred material such as strange types of bread from many parts of the world, beginning with an ancient Egyptian loaf found near the pyramids, various kinds of farinha and cassava cakes prepared by the natives of British Guiana and Paraguay, Klow Kow Niew and Cow Kliop cakes of Siam, piki bread of the Hopi Indians, a 28-pound loaf of Russian bread and and many other varieties. Among the objects added to the wheat products are sixteen varieties of macaroni, product of durum wheat, in as many different sizes and shapes, many greatly different from the familiar kind. All of these cases are additions to the economic series of food plants and their products.

Adjoining the maize exhibit a case of sorghum and millet has been installed. Field Museum is thus able to show this interesting group of plants which are extensively grown in the Great Plains, especially in Oklahoma, Kansas and Texas. Sorghum syrup is one of the competitors of cane sugar in the United States, and is manufactured chiefly in Tennessee. The plants of sorghum and millet used in the exhibit were grown at the Garfield Park Greenhouses from seed furnished by Field Museum. These plants serve to show the habit of growth, and they are shown surrounded by the fruiting heads

of the principal varieties of sorghum and millet, together with specimens of their seeds. The fruiting heads and seeds of the sorghums were supplied through the courtesy of the Oklahoma Agricultural Experiment Station.

Near the flour mill model is a case containing the stalks, grain and principal products of rye and barley. The use of rye for flour, whiskey and paper-making is described, and samples illustrative of such use are shown. Four bunches of barley stalks with matured grain of erect six-rowed barley, nodding six-rowed barley, two-rowed barley and beardless barley are exhibited; also tubes containing pearl barley, beer and barley flour. The stalks of barley and rye were donated by the Canadian Pacific Railway, while the manufactured products are gifts from the American Cereal Company and the Old Times Distilling Company. A general label states places in which rye and barley are grown, their antiquity, uses, and the countries of maximum production.

Adjoining the rye and barley exhibit is a similar one of oats, rice and their products. Headed stalks of the white awnless Tartar King Oats, the awned Swedish Oats Select and the black-hulled Joannette Oats are shown. These were given to Field Museum by the Idaho Agricultural Experiment Station. Through the courtesy of the American Cereal Company some products such as rolled oats, oat meal and oat flour are exhibited. The United States Department of Agriculture has assisted by giving excellent matured stalks of the short-kerneled awnless Blue Rose Rice, the long-kerneled awnless Honduras Rice and the small round-kerneled awned Wataribune Rice, all of them more or less extensively cultivated in the United States. Out of more than 1,000 known varieties of rice these serve to show to the public the general habit of rice. Tubes containing unpolished rice, polished rice and rice flour are placed adjacent to the stalks. A general label for rice and a general label for oats placed in the case give information as to the climatic conditions suitable for these grains, principal regions of production, and uses and value for nutrition.

In the central portion of Hall 25, near its west entrance, has been placed a case containing an exhibit which serves chiefly to call attention to the general nature of the exhibits in the hall. In it is found the bunch of Peruvian corn mentioned above, suspended as is customary in that country. It consists of a mixture of differently colored and shaped varieties, and affords an interesting comparison with the more complete showing of corn in nearby cases. On the floor of the case is a group of ears of fancy colored dent corn from Missouri.



In the reinstallation of economic botanical exhibits in Hall 25 the method of installation initiated last year has been continued, all bottles and jars having been removed, as well as all trays above the level of the eye. The products, particularly the most perishable ones, those subject to change from oxidation, deliquescence or insect injury, have been hermetically sealed in glass tubes of suitable diameters, which vary somewhat with the products. These tubes set vertically, each properly supported in its own label block, provide a high degree of visibility as well as protection for the contents. The individual label block-support fastened to the back of the case permits the arrangement of the material in any manner desired in a vertical case; for example, in the form of a flowsheet, which was not possible with the linear series of trays and bottles on shelves. In the case of closely related products from the same source, their arrangement with reference to each other or in relation to their production or manufacture, adds greatly to the intelligibility and interest of their display.

Many thousand specimens have been transferred from cardboard boxes and tin cans to screw-cap glass jars and poisoned. In this way they have been protected from fungi, rodent and insect injury, and their visibility has been increased. Each specimen, which heretofore had been identified only by a number referring to a catalogue entry, has had a label and index card made out for it and has been systematically stored. Specimens treated in the above manner include wheat, oats, barley, rye, rice, millet, sorghum, corn, corn products, starch, sugar, beet products, macaroni, cassava products, the thousands of specimens of 72 plant families in Hall 29, and the palm material in Hall 25.

The study collection of woods, consisting of several thousand hand specimens from the United States and foreign countries, was formerly stored under the lockers of the exhibition cases. They have now been brought together in one room on the third floor and arranged in storage cases in such manner that they are readily accessible. The present arrangement adopted in the case of this wood collection is geographical, which has the virtue for the time being of keeping separated the various lots received from various foreign countries, useful provisionally as long as many determinations are still uncertain. The arrangement of each geographical unit is, however, into plant families.

Mr. Samuel J. Record, Professor of Forest Products in Yale School of Forestry, who has joined the staff of the Museum as Re-

search Associate in Wood Technology, spent the month of August in supervising the organization of this reference collection, checking up and correcting the determination of the specimens. Their number was also considerably increased, partly by gift or exchange from the Yale School of Forestry, and partly by cutting pieces of suitable size from many large exhibition and storage specimens..

Plans were also made by Professor Record for many improvements in the exhibits in the wood halls, both of American and foreign woods. It is expected that with the cooperation of Professor Record, and his guidance, the wood collection will become of greatly increased importance and the exhibits more adequate and representative.

Some of the exhibition specimens in the Hall of North American Woods (Millspaugh Hall) have been condemned as not representative of the best quality of lumber in present use, and these it has been decided to replace. Various associations, such as the American Walnut Growers' Association, and firms specializing in certain woods, have signified their willingness to cooperate in securing typical display material.

The Department's activities in the herbarium were directed to the requirements of botanical investigation. In a rapidly growing herbarium (such as that of Field Museum, which now has over 570,000 mounted sheets, ranking it in size among the most important herbaria of the world) there is a vast amount of routine clerical work connected with the preparation, organization, cataloguing and filing of collections, so that, this year as in previous years, the small staff has been occupied in keeping up with the work incident to the growth of the collections. The plant mounter attained the very satisfactory total of over 10,000 in number of specimens mounted. In addition he strapped many thousands of sheets needing this greater protection, and attended to the fumigation and storage of collections awaiting disposition. The Custodian of the Herbarium completely worked over the Moffat collection of higher fungi, totaling 1,128 examples, freshly labeling, boxing and filing them so that this important gift (recorded in the 1926 Report) is now available for reference. He also inserted in the herbarium over 12,000 specimens, which involved the writing of several thousand folder-covers for the large number of genera and species not before represented in the collections. His cataloguing recorded over 8,000 new sheets, and in addition he wrote about 4,000 labels for duplicate specimens to be used in exchange. Most of these were for the Gaumer collections from Yucatan. Their

labeling is now nearly completed, as many thousands were also written by the Librarian of the Department. The most important unfinished work in hand in the herbarium has for some years past been the Peruvian collections secured by Messrs. Macbride and Featherstone in 1922 and by Mr. Macbride in 1923 on the two Captain Marshall Field Expeditions to the Peruvian Andes, supplemented since by additions made each year by Dr. Weberbauer. During the present year these have had to be held in abeyance in favor of the important Yucatan collections of Messrs. Millspaugh and Gaumer, which had remained untouched for over a dozen years. These have now been almost completely organized and made up in sets for distribution. The study of the Yucatan material, begun by Dr. Millspaugh in 1895 and resulting in publications by him in that year, and others in 1903 and 1904, was, at the request of the Museum, continued by Dr. Paul C. Standley of the United States National Museum. In this connection Dr. Standley spent the month of September at the Museum checking over the entire Millspaugh-Gaumer collections of several thousand sheets, and making necessary changes in determinations in conjunction with the preparation of a list of the plants of Yucatan which is expected to be ready for publication in 1928. During his stay in the Museum Dr. Standley also found time to name thousands of specimens from various parts of the world that heretofore had been stored awaiting determinations before they could be filed in the herbarium. Altogether he handled some 8,000 sheets, naming or renaming most of them. The Department records its appreciation of Dr. Standley's work, which thus added a large number of sheets to the collection available for reference.

The only specimens sent out in exchange from the herbarium during the year were 42 co-types of Peruvian plants in return for similar material from the Museum at Berlin-Dahlem, and 103 duplicates to the Gray Herbarium in exchange for determinations. From the loan records kept in the Department, it appears that the more important loans include the following:

Fifty sheets of *Bidens* to the University of Iowa; 220 South American plants, including 48 specimens of *Heliotropium*, to Dr. I. M. Johnston of the Gray Herbarium of Harvard University; 78 *Labiatae* to Dr. Carl Epling, University of California, Southern Branch; 376 South American *Compositae* to Dr. S. F. Blake, United States National Museum; and numerous smaller loans. Most of these loans represent further progress on the part of specialists in their study of the Peruvian collections.



## ROSE MALLOW.

The Rose Mallow is a native of the United States, and is found in all parts of the country. It is a very common plant, and is often found in the fields and along the roads. It is a very hardy plant, and is able to withstand the cold of winter. It is a very beautiful plant, and is often used for ornamental purposes. It is a very useful plant, and is often used for medicinal purposes. It is a very common plant, and is often found in the fields and along the roads. It is a very hardy plant, and is able to withstand the cold of winter. It is a very beautiful plant, and is often used for ornamental purposes. It is a very useful plant, and is often used for medicinal purposes.

No. B-41



TYPE OF CASE LOANED TO THE SCHOOLS OF CHICAGO BY THE N. W. HARRIS PUBLIC SCHOOL EXTENSION OF  
FIELD MUSEUM OF NATURAL HISTORY

One-sixth actual size

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No. B-41

There remains for mention one other important loan—231 lichens to the late Professor Bruce Fink of Miami University, Oxford, Ohio, well-known lichenologist, who last year worked over the Museum collection of lichens and whose death is recorded regretfully.

**GEOLOGY.**—To the exhibit of South American minerals and ores in Stanley Field Hall, a number of specimens and photographs were added from the collections made by the Associate Curator in Brazil in 1926. These additions chiefly illustrate Chilean and Bolivian copper and tin ores and minerals, and those of the Chilean nitrate-producing areas. A number of specimens of gems received by gift during the year were added to the Higinbotham Hall exhibits. These included specimens of chrysoprase, amber, opal and precious orthoclase and spodumene.

In Hall 34, devoted to systematic minerals and meteorites, most of the specimens presented by Mr. W. J. Chalmers during the year were installed in their appropriate places in the crystal and systematic collections. The large beryl crystal collected by the Curator in Maine was also installed here. A special exhibit of agate, numbering about 40 specimens and illustrating many features described in the Museum leaflet on Agate which was published during the year, was installed in a wall case in this hall. The principal varieties of agate, based on differences of pattern, are illustrated by cut specimens, as are also natural and artificial colorings of agate and agates in the rough as mined.

Change of the color of the case interiors in this hall to conform to that adopted for the other halls has been carried on during the year as opportunity permitted. This has now been completed for all cases with sloping tops, sixteen in number. For this work it was necessary to remove all the specimens and label and reinstall them. This involved the double transfer of over 2,000 specimens and labels.

A number of changes were made in the installation of the relief maps in Buckingham Hall, chiefly by providing inclined bases for mounting. These facilitate observation of the maps, both by bringing them nearer to the eye of the observer and by lessening reflections from the cover glasses. Considerable economy of floor space is also afforded by this method of installation. The maps of the Grand Canyon, of the states of Missouri, Kentucky, Massachusetts, Connecticut, New Jersey and New York, of the Catskill Mountains and of the Chattanooga District were mounted in this way. Individual tables were made for the relief maps of Illinois and Chicago and

the maps installed on them, likewise in an inclined position. The saving in space gained by these changes of installation made it possible to remove one of the map tables from the hall and give its place to the model of the Virginia Natural Bridge, thus providing better lighting for the latter. All of the small relief maps, eleven in number, which had hitherto been scattered, were installed on one table.

Several specimens collected by the Rawson-MacMillan Subarctic Expedition of 1926 were installed in cases in the structural geology division of this hall. These specimens included three large slabs of ripple-marked sandstone from Nova Scotia, two specimens showing joint structure, and one of contorted gneiss from Indian Harbor, Labrador; two specimens of veins from Battle Harbor, Labrador, and one large specimen of conglomerate from Nova Scotia. Three specimens of calcareous tufa and one of dendrites from Chile, collected by the Captain Marshall Field Brazilian Expedition of 1926, were also installed here, and to the case of cave products in the same hall were added three recently obtained specimens of stalagmites from Italy.

In this hall the work of changing the color of the case backgrounds has been started. Four cases of the systematic rock collection have been dismantled for this purpose, the screens painted and the specimens reinstalled.

Owing to the proposed change of color to be made in the case backgrounds and labels of the economic sections in Hall 36 and Skiff Hall, and the entire removal and reinstallation of specimens which this will involve, comparatively few changes in installation in these halls were made during the year. The interiors of two cases in Hall 36, containing exhibits of peat and its products, were recolored, and the specimens were rearranged and some added, the most important being a large mass of sphagnum peat from Esthonia. To the petroleum exhibit there were added the large mass of oil-bearing sand received during the year and new petroleum products presented by the Standard Oil Company (Indiana). Several of the lubricating and other oils made from petroleum, which had been on exhibition and had deteriorated, were replaced by fresh specimens also presented by the Standard Oil Company (Indiana). Several specimens of volcanic sulphur from the Andes were added to the exhibit of sulphur, and specimens of other South American products which were collected by the Associate Curator were added to the corresponding exhibits. The latter included chiefly specimens of niter, salt and guano. Minor revisions were made in the exhibits of tin, zinc, copper and silver ores. To illustrate the lightness of metallic beryllium, a metal now coming

into commercial use, a small balance was made on which is shown a prism of iron that is equalized in weight by a prism of beryllium nearly five times as large.

In preparation for changes in installation in Skiff Hall, much economic material which had been held in temporary storage was assorted and placed in trays so that selection of specimens for exhibition may be more readily made.

The munificent gift contributed by Mr. Ernest R. Graham for the purpose of making important additions to the Hall of Historical Geology has enabled work to be begun which will bring about a considerable reorganization of the installation in this hall, now known as Graham Hall.

One of the most important features to be added will be a continuous frieze of paintings around the walls of the hall. These paintings are to represent typical life and scenery of successive geological periods. They are to be comprised in 28 panels, fourteen of which will be approximately 25x9 feet in size and fourteen 11x9 feet.

The services of Mr. Charles R. Knight, the well-known artist who has specialized in this field, were fortunately secured for the execution of these paintings. He has already completed four and they have been given temporary exhibition in the hall. These represent the following subjects: The Beginnings of Life, Egg-Laying Dinosaurs, Moas of New Zealand and Australian Giant Kangaroos and Diprotodons.

There is also contemplated for the hall preparation of eleven groups, modelled in three dimensions, by which the life of the past will be further visualized and its form restored. The construction of one of these groups, that representing a forest of the Carboniferous Period, was begun by Dr. Dahlgren during the year and considerable progress made. A working model on the scale of one inch to a foot was first made. A technique was then developed adapted to the faithful reproduction of the character of the fossil plants. The surface markings of the giant club-moss stems which formed the trunks of the forest trees have been transferred wholesale by mechanical means to their reconstructed counterparts which will make up a large part of this forest group. There are many difficulties and new problems of technique, as well as of paleobotanical science, to be solved or disposed of in the course of such an undertaking, but it is expected that with the promising beginning made, the end of another year will see this group far along toward completion.

The arrangement of the paintings and groups in the hall, will, like that of the specimens exhibited, be in chronological order, corres-



ponding with that of geological periods, and will illustrate the gradual expansion and diversification of life as well as the rise and fall of species, which took place during successive stages of the earth's history.

In order to secure uniform and accurate lighting for the paintings and specimens, it is intended to use artificial light only in the hall. Not only will the paintings and groups be lighted in this way, but each of the large cases of fossils will have a special series of lights. Most of the wires for this lighting have already been laid.

In preparation for the changes to be made in the hall, the entire group of fifteen windows on the east side was bricked up and plastered, and the windows on the west side were covered with tightly-fitting composition board of a color harmonizing with that of the exterior of the building. During the progress of this work the exhibits were moved to the center of the hall, but changed in position so as to allow the cases to be viewed by visitors and at the same time permit the alterations to be carried on. During a period of several weeks allowed for the drying of the plaster the cases were returned to their former positions. At the end of this time the cases were again removed to the center of the hall and the hall closed for painting. The walls and ceiling were then cleaned and painted, and the hall was made ready for installation of the paintings and other exhibits.

In order to provide space at the south end of the hall for three of the groups, five upright and two sloped-top cases were removed from that area. Of these, three were moved outside the hall; the others were transferred to new positions within the hall.

As in the other halls of the Department, the color of the case interiors is being changed to buff. In connection with this work it has been found desirable to line the backs of the cases with composition board and to incline the upper shelves. Supporting brackets are thus made less conspicuous and a better visibility of the specimens is obtained. These alterations make it necessary to remove all specimens and reinstall them. The cases in which these alterations have thus far been made are: one of European Quaternary Mammals, two of American fossil elephants, one of Rancho La Brea fossils, two of South American fossil mammals, and one of dinosaur restorations.

The large skull and tusks with lower jaws of the Mastodon found near Rensselaer, Indiana and received early in the year were, after preparation, mounted upon a base similar to those employed for other large mounts of this character and installed with the other North and South American Mastodon specimens at the north end of the hall.

A base was also made for one of the large trunks of Devonian trees collected in New York in 1926, and this was installed in the Devonian section of the hall. As fast as prepared, specimens of the South American fossil mammals collected by the Captain Marshall Field Expedition to Argentina have been installed in the two cases devoted to this purpose in this hall. Important specimens of this group added during the year include a skull and other parts of the rare tapir-like *Homalodontotherium*, lower jaws of the seldom obtained *Astrapanotus*, upper and lower jaws of the elephant-like *Pyrotherium*, and a skull and parts of a skeleton of *Eucinepeltus*. An excellent skull from Texas of the Permian amphibian *Eryops* was also installed in the Permian exhibit.

The walls and ceilings of the office and laboratory of the Curator and of the Department library have been cleaned and painted. In Room 121 of the Department library, which had been darkened by covering the skylight, large lights were installed, and the lighting of Room 119 of this library was changed so as to provide individual lights for each alcove instead of the general illumination previously used. Room 120, devoted to general study collections, was also furnished with more artificial light in order to compensate for covering the skylight. The tray racks in this room were fitted with 89 full-sized steel doors in order to protect the contents of the trays from dust and other possible injury. Each door was provided with a neat label holder, and labels indicating the contents of the trays were provided for these. Similar doors, label holders and labels were provided for the tray racks containing the vertebrate paleontology study collections in Rooms 101 and 102. There were 60 of these doors. The tray racks in the laboratory of invertebrate paleontology, Room 110, were also provided with similar doors, seventeen in number. A large cement-walled room, capable of being hermetically sealed, was constructed on the ground floor of the building for the purpose of storing the field bundles of vertebrate paleontology. Since the exigencies of field work sometimes require the use of flour paste in wrapping the bundles, this room affords a place where such bundles can be protected from mice and other vermin which might have infested them during their period of transit or subsequently. Being air-tight, the room can at any time be fumigated and any vermin destroyed. Three tiers of plank shelving were built entirely around the interior of this room, thus affording space for storing the bundles. Sixty-one boxes of fossils collected by the Captain Marshall Field Paleontological Expedition to Argentina were unpacked and their contents distributed in this

room during the year, the bundles being placed serially according to field numbers, so as to permit easy selection of any desired number.

In the paleontological laboratory the following specimens were prepared for exhibition: various parts of the great birds, *Phororhachus* and *Physornis*, and two smaller birds; upper jaws, with dentition, of the elephant-like *Pyrotherium*; lower jaws of *Astrapanotus*; skull and three-fourths of a skeleton of *Hapalops*; skull and two-thirds of a skeleton of *Homalodontotherium*; skull and jaws of *Equus Andeum*, and skull and jaws of a young adult *Mastodon Americanus*. The preparation of two skeletons of the large South American ground-sloth, *Scelidotherium*, was partially completed.

All of the above specimens, except that of *Mastodon*, were South American fossil vertebrates collected by the Captain Marshall Field Paleontological Expeditions to Argentina and Bolivia.

In the chemical laboratory, complete quantitative analyses were made of the Coldwater and Navajo No. 2 meteorites. The nickel content of another Arizona meteorite was also determined. Partial analyses of several rocks and minerals for the purpose of identification were also made. Work on the restoration, by the Fink electrical process, of a number of oxidized bronzes from Kish, has been carried on at intervals during the year, with results that continue to be eminently satisfactory, even with some objects so decomposed that their restoration seemed hopeless. Some analyses of archaeological specimens and some of industrial substances used in the museum building were also made in this laboratory. The Curator and Associate Curator made a number of experiments which resulted in evolving a satisfactory method for covering the windows in Graham Hall.

Besides constructing bases for the *Mastodon* skull and Devonian trees, Preparator Legault made frames for ten large Carboniferous trees for the Carboniferous Forest group. He also polished fourteen large sections of meteoric irons. Of these eleven were etched.

The Curator, besides assisting in the preparation of a leaflet on *Agate* which was published during the year, completed the text of one on *Famous Diamonds*.

Associate Curator Nichols prepared a leaflet on *Portland cement*. Assistant Curator Roy prepared a leaflet with the title, "How Old are Fossils?" which was published during the year. He also completed a paper describing a number of new specimens of invertebrate fossils. These were chiefly specimens contained in the Borden collection or in collections made by Associate Curator Nichols in South America in 1926.

ZOOLOGY.—Notable improvements and additions to the zoological exhibits were made during the year. Especially good progress was made in the production of large mammal groups and in installations to conform to plans for special halls of such groups.

Hall 22, devoted to the larger mammals of Africa, was dedicated to the late Carl E. Akeley by vote of the Board of Trustees, and will be known as Carl E. Akeley Memorial Hall. Early in the year, a new group for this hall was completed and installed. This is a group of the graceful antelopes known as the Uganda Kob. It contains five animals collected and presented by Messrs. John T. McCutcheon and Fred M. Stephenson. They are represented on open grassy veldt in gradual motion as part of a herd feeding. The group was prepared by Mr. Leon L. Pray.

Another important addition to the display of large African mammals is the Hippopotamus which was finished and placed temporarily in a prominent position in Stanley Field Hall. It is a single animal of large size, prepared by Mr. Leon L. Walters by the so-called "celluloid" process of reproduction heretofore employed mainly in preparations of reptiles and amphibians. The material used in this case is cellulose acetate, and the result is a completely lifelike presentation of an animal which has never before been satisfactorily prepared for museum exhibition. Fine details in the texture of the skin and lifelike translucent color effects are fully achieved and, although the completed specimen is almost wholly artificial, it is far superior to any preparation in which the skin itself is preserved. Its strength and durability seems assured, and these features serve to recommend it further. It is not a model in the usual sense, but a reproduction in which the use of an actual specimen is essential to the process.

In Hall 16, habitat groups of large American mammals, two new groups were installed and three others were transferred from open floor cases and reinstalled in built-in spaces with painted backgrounds and well-controlled lighting. This hall now contains eleven finished groups of high quality and permanence, and the twelfth, a group of Glacier Bears, which will complete the east half of the hall, is far advanced in preparation. The two new groups installed in 1927 are those of the Olympic or Roosevelt Elk and the Mule Deer. The Elk group, collected and prepared by Mr. Julius Friesser, is a large one of great beauty, occupying a space of 24 feet and including five large majestic animals. The painted background depicts a scene in the luxuriant forests of western Washington, and the accessories of the foreground not only include faithful reproductions in wax of the small-

er plants and flowers of the forest floor, but several actual trunks of large forest trees standing in natural positions. The Mule Deer group reproduces a scene on the famous Kaibab Plateau of Arizona near the Grand Canyon of the Colorado. A family group of deer are shown, a large buck, two does, and two spotted fawns, pausing before they start down a trail leading into the canyon, the vivid colors of which appear on the background. The group was collected and prepared by Mr. C. J. Albrecht and the background was painted by Staff Artist C. A. Corwin from personal studies made in the field. The reinstalled groups in Hall 16 are those of the Alaska Moose, Pronghorn Antelope, and Sonora Grizzly, all of which are greatly improved in their new positions with new paintings as backgrounds and new conditions of lighting and arrangement.

The exhibition of mammals was further improved by the complete elimination of old style cases from Hall 15, and some alterations were made possible in the systematic collections shown there. Four cases of mammals were completely reinstalled in this hall and minor changes were made elsewhere.

Two new cases of fishes were finished and placed in Hall 18. One of these contains sharks obtained on recent expeditions, and the other is devoted to ganoids, garpikes, etc. Two old style cases were removed from this hall, and extensive substitution of light colored labels for black ones was carried on throughout the hall. For further expansion of the exhibit of fishes, Taxidermist Pray completed the preparation of 80 specimens which are awaiting installation. These include rays, skates, and a variety of small food and game fishes.

Development of the systematic exhibit of birds was continued, and, despite a considerable absence of Taxidermist Hine in the field, one case of large waterbirds was finished and installed. It contains no less than 54 specimens of 50 different species consisting of freshly mounted or carefully renovated specimens of gulls, auklets, loons, grebes, and their allies. The extinct Great Auk, of which the Museum does not possess a specimen, is represented by a replica manufactured from the feathers of other birds, but presenting the true appearance of the species. A considerable number of additional birds were mounted during the year to be utilized in later installations. Three cases containing Abyssinian paintings of birds by the late Louis A. Fuertes, presented to the Museum by Mr. C. Suydam Cutting, were installed in Stanley Field Hall. At the same time a case of Birds of Paradise was removed from this hall to Hall 21.

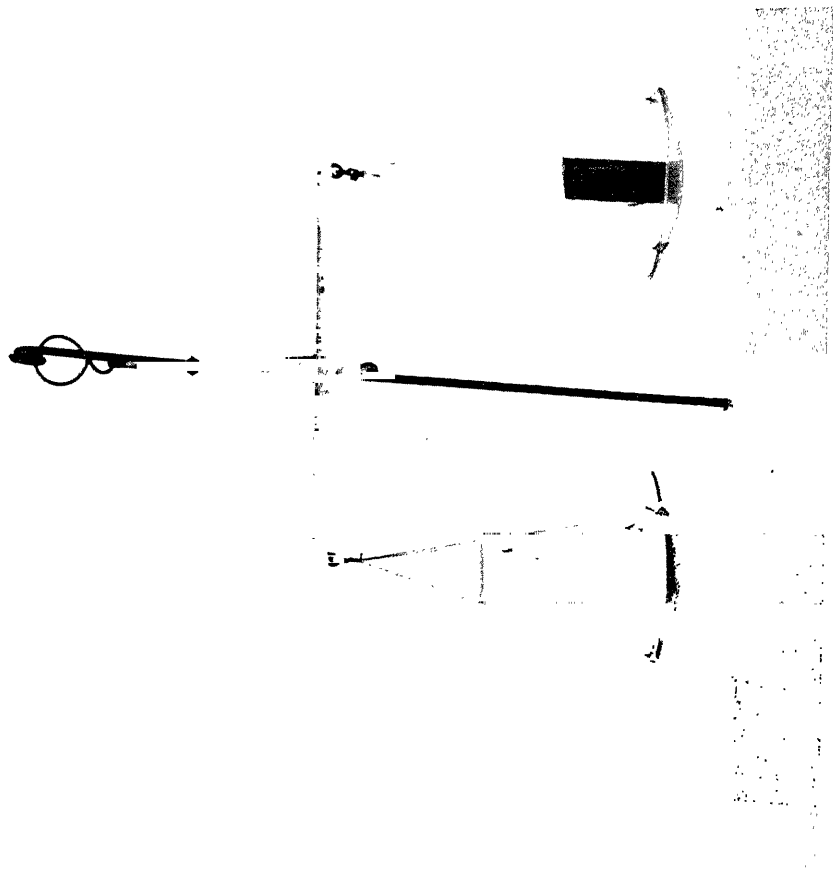


EXHIBIT ILLUSTRATING LIGHTNESS OF METALLIC BERYLLIUM

The prism of beryllium (at left) is equalized in weight by the prism of iron one-fifth its size, at the right  
Frederick J. V. Skiff Hall (Hall 37)



The preparation of reproductions of reptiles and amphibians in pyroxylin and cellulose acetate has continued. A number of specimens prepared from field molds secured on the Captain Marshall Field Central American Expedition have been completed, but their exhibition has been delayed.

Improvements in the care and arrangement of reference collections and in efficient handling and disposition of incoming material have received attention. Sixteen new steel cases for the storage of birdskins, as yet unprovided with trays, were placed in Room 76, and the same number for mammals were received in Room 77. In the division of reptiles, doors were provided for the storage cases, and the metal tanks used for large specimens were equipped with movable trucks.

The osteologist and the tanners have continued with their work at the usual rate, but owing to the large accessions from expeditions, a considerable number of skulls for cleaning and certain skins of large mammals for tanning have been sent to outside agencies.

The preparation of the long delayed exhibit of North American butterflies received attention, but no permanent installations were made. The exhibit of scorpions and centipedes was subjected to revision and prepared for reinstallation. Much work of a routine order occupied the time of the staff. The giving of information to the public directly and through correspondence, and the general demands of all sorts were greatly increased over former years. The books of the departmental library were rearranged to accommodate extensive additions, the equipment returned from expeditions was classified and stored in a special room, specimens were selected and provided as photographic subjects for postcards, storage cases were rearranged practically throughout the Department, and much work of a miscellaneous character was done.

#### THE N. W. HARRIS PUBLIC SCHOOL EXTENSION

For fifteen years, since 1912, the date it began to function, this Department of the Museum has prepared small, portable exhibition cases of natural history and economic subjects, and made loans of them to the schools of Chicago. Up to the present time 1,020 such cases have been prepared, and are now available for school purposes. Fifty-five of them were prepared during the period under review. In addition to the cases completed during the past year there are also a number of them in various stages of preparation. In the total number of completed cases there are 350 botanical, geological and



internationally, which has contributed to the success of these efforts, is herewith given grateful recognition.

Efforts to acquaint strangers in the city with the ways to reach the Museum were continued. As in past years, various advertising media were generously placed at the disposal of the Museum without charge, and this opportunity is taken to extend the gratitude of the Institution to the donors of the space. Other media of publicity which have given attention to the Museum and its activities include general and popular magazines, scientific publications, trade journals, moving picture newsreels, and radio stations.

**PRESS PUBLICITY.**—The number of news stories emanating directly from the Museum during the year totalled 246, or an average of nearly five each week; the Museum also supplied 153 photographs and groups of photographs to newspapers and news agencies. Each of these was printed in several of Chicago's daily newspapers; many were printed in all. They were given a large amount of space also in the community, suburban and foreign language groups of newspapers. The majority of the stories, and many of the photographs, were given nationwide circulation by news agencies, and printed in hundreds of newspapers from coast to coast.

In addition to the publicity stories released by the Museum itself, hundreds of other stories and news photographs in which the Museum appeared either as a major element or incidentally, were published both in the newspapers of Chicago, and in newspapers throughout the country. Two newspaper serials, "To the 'Mountains of the Moon'" by Jack Baum, historian of the Field Museum-Chicago Daily News Abyssinian Expedition, published in the Chicago Daily News and associated newspapers in other cities, and "East of the Sun and West of the Moon," an account of the James Simpson-Roosevelt Asiatic Expedition, by Theodore and Kermit Roosevelt, published in the Chicago Daily Journal, and syndicated nationally, gave the Museum widespread and long continued publicity.

News stories about the Museum ranged from items of 50 words and up to half or full column articles, and in many cases full page feature articles. Editors have been so impressed with the Institution's activities that in many cases they have written laudatory editorials in the columns of their papers. Clippings of more than 100 such editorials, both from papers in Chicago and from widely scattered cities, have been received.

Among the agencies which have cooperated in giving nationwide and world-wide distribution to Field Museum news and photographs are the Associated Press, United Press, International News Service, Universal Service, Newspaper Enterprise Association, Central Press Association, Science Service, Chicago Tribune news service, Consolidated Press, New York Times news service, New York Herald-Tribune news syndicate, New York World news service, North American Newspaper Alliance, Pacific and Atlantic Photos, United News, Underwood and Underwood, International Newsreel, Wide World Photos, Reuter's, Havas, Exchange Telegraph, Central News, Agence Radio, Rosta, British United Press, Nippon, Dempo and others.

**PUBLICITY IN PERIODICALS.**—A great amount of space was given to Museum activities in general and popular magazines, trade journals, scientific publications and other periodicals. Many of these articles were prepared at the Museum at the request of editors; others were written by outside writers. They were usually profusely illustrated with pictures of Museum exhibits. Included among 49 magazines publishing such articles were Saturday Evening Post, Liberty, Scientific American, Chicago Commerce, Popular Mechanics, Architectural Record, Science, American Journal of Science, Nature Magazine, Popular Science, St. Nicholas, Century, and Atlantic Monthly.

**ADVERTISING.**—A wide variety of advertising media have called attention of the public to Museum exhibits and activities. The Chicago Rapid Transit Company, as in previous years, kindly displayed in elevated stations a series of six colored posters depicting Museum exhibits. The Chicago, North Shore and Milwaukee Railroad allotted space throughout the year to Museum exhibits and lectures in its "This Week's Events" posters displayed at all stations between Chicago and Milwaukee. The Chicago Surface Lines printed at their own expense and displayed in the street cars overhead posters advertising the Museum. The Illinois Central Railroad displayed at its city and suburban stations placards announcing the spring and autumn lecture courses. These posters were also displayed in Marshall Field and Company's retail store, and in libraries, schools and other institutions.

The Clyde W. Riley Advertising System, which publishes the programs for seventeen theatres, continued its courtesy of giving the Museum from a half page to a page of advertising space in each program. Likewise, space was again given by officials of the Audi-

torium Theatre for a Museum advertisement in each program issued during the 1927 season of the Chicago Civic Opera Company, this courtesy being secured through the interest of President Field.

Through the courtesy of officials of the International Live Stock Exposition, Field Museum posters and direction folders were brought to the crowds attending. Parts of newspaper advertisements of Marshall Field and Company, the People's Gas Light and Coke Company, the Yellow Taxicab Company, and other firms were devoted to advertising the Museum. Space was devoted to the Museum also in the house organs for customers and employes of the Stevens Hotel, People's Gas Light and Coke Company, Commonwealth Edison Company, Illinois Bell Telephone Company, and in the advertising folders and posters of many railroads, lake steamship lines and hotels. The "Bulletin of Educational Events in Chicago" generously gave the Museum advertising space.

A new folder was issued by the Museum, in which a brief outline was given of some of the outstanding exhibits, as well as directions for reaching the Institution. Through the cooperation of local transportation companies, railroads, hotels, clubs, travel bureaus, department stores, and other such agencies, 187,000 of these folders were distributed. These were also sent to chairmen and secretaries of conventions meeting in Chicago, with invitations for delegates to visit the Museum.

NEWSREELS.—Field Museum activities were also brought before the public in motion pictures by Kinograms Newsreel, Chicago Daily News, Pathe, International Newsreel, and in a special film taken by the Chicago, South Shore and South Bend Railroad, which was exhibited in all towns and cities along its lines.

RADIO.—The Museum received publicity through radio broadcasting by stations WMAQ of the Chicago Daily News, WGN of the Chicago Tribune, and other stations. The Outing and Recreation Bureau, maintained by a group of transportation companies and other public utilities, had a special radio talk on the Museum broadcast by one of its lecturers.

#### DIVISION OF PRINTING

Never before has the Division of Printing printed so large an amount and so extensive a variety of matter as it did during the year 1927. This was foreseen as the requisitions made upon the Division

have been steadily increasing. This increase in the output of the Division has been, in part, due to the result of several noteworthy additions to the equipment.

During the forepart of the year a monotype equipment was installed in the Museum, so that all of the composition work for scientific publications, leaflets, etc. could be done under direct supervision. This addition has already resulted in a considerable saving of time and labor. The acquisition of a folding machine has been the means of increasing the output of the bindery. For the printing of colored plates a complete set of patent steel unit bases was purchased, thus rendering it possible to print more than one color process plate at a time. These bases proved their usefulness in printing the colored plates for the Pike and the Agate leaflets.

The following publications were printed and bound during the period under review:

Regular Publication Series.....	10,966	copies
Leaflet Series.....	35,987	"
Direction Folders for Rapid Transit Company (8 pages).....	86,516	"
Direction Folders for Public Relations Division (8 pages).....	100,450	"
General Guides.....	7,200	"
Illustration Index for Report Vol. VI.....	1,800	"
Publication Price List.....	300	"
Leaflet Price List.....	200	"
Large Post Card Albums.....	145	"
Miniature Sets of Exterior and Interior of Building.....	600	"
Pictorial Post Card Albums.....	2,800	"
Post Cards—New View of Building.....	6,000	"
Post Cards—Old View of Building.....	7,675	"
Educational Post Cards (20 cards in set).....	10,400	"
Total.....	271,039	copies

The number of labels and other impressions follows:

	Exhibition labels	Other impressions
Anthropology.....	6,695	17,786
Botany.....	2,943	39,325
Geology.....	573	4,000
Zoology.....	647	8,025
Harris Extension.....	714	960
General.....	....	334,819
Raymond Division.....	....	212,449
The Geographic Society.....	....	62,825
Total.....	12,145	680,189

## DIVISIONS OF PHOTOGRAPHY, ROENTGENOLOGY AND ILLUSTRATION

PHOTOGRAPHY.—The total number of lantern slides, negatives, and prints made by the Division of Photography during the year amounted to 14,836. The following tabulation is a summary of the work performed:

	Number of lantern slides made	Number of negatives made	Number of prints made	Number of enlargements made	Number of negatives developed for field expeditions
Anthropology.....	475	1,531	798	106	...
Botany.....	...	184	1,138	98	36
Geology.....	...	133	350	4	...
Zoology.....	446	891	3,375	77	18
Harris Extension.....	...	52	135	25	...
General.....	...	82	513	...	...
Gift.....	6	...	460	4	...
Sale.....	15	...	94	...	...
Public Schools.....	1,899	367	289	...	36
Photogravure.....	...	213	213	...	...
Publicity.....	...	82	697	12	...
Totals.....	2,841	3,535	8,044	326	90

ROENTGENOLOGY.—During the year the Division of Roentgenology X-rayed many unusual specimens for the various Departments of the Museum, which resulted in interesting developments. In this work, 463 films and 1,150 prints were made. A series of prints of Egyptian and Peruvian mummies have been sent to Dr. Roy L. Moodie, who is studying them from a paleopathological standpoint, and plans to prepare a publication on the subject for the Museum series.

In response to a request from the Nebraska Medical Association, prints of anthropological and zoological specimens were sent for exhibition at the Nebraska State Fair. Programs were arranged for the members of the North American Radiological Technicians' Association, at their annual meeting held at the Museum, and for the Chicago Dental Society's Annual Convention held at the Drake Hotel, at which times demonstrations were given of the work done in the Division of Roentgenology.

PHOTOGRAVURE.—The following statement shows the number of photogravures made by this Division during the year for illustrations





GROUP OF OLYMPIC ELK OR WAPITI  
Hall of American Mammal Habitat Groups (Hall 16)  
Taxidermy by Julius Friesser. Background by Charles A. Corwin  
About one twenty-fifth natural size

for the publications and portfolios printed by the Museum and for picture postal cards:

	Number of prints
Publication illustrations.....	104,000
Leaflet illustrations.....	114,000
Design Series illustrations.....	48,000
Akeley Memorial Portfolio.....	240,000
Carl E. Akeley portrait.....	5,000
Postal cards of Field Museum building.....	38,300
Special.....	290
Total.....	549,590

ARTIST.—The following record of work accomplished during the year by this Division will show a very large increase over that of the year 1926:

Drawings made.....	253
Lantern slides colored.....	970
Photographs retouched.....	76
Photographs colored.....	31
Negatives blocked.....	81
Maps drawn.....	13
Steel dies engraved.....	3
Cuts and letters tooled.....	12
Letters repaired.....	14
Lettering for Akeley Memorial Portfolio.....	1
Miscellaneous items made.....	25
Total.....	1,479

### DIVISION OF MEMBERSHIPS

Following is a classified list of the total number of members of the Museum, of whom 1,278 were added during the year 1927. The names of the members will be found elsewhere in this report.

Benefactors.....	14
Honorary Members.....	21
Patrons.....	27
Corporate Members.....	49
Life Members.....	315
Non-resident Life Members.....	6
Associate Members.....	1,564
Non-resident Associate Members.....	1
Sustaining Members.....	383
Annual Members.....	2,308
Total.....	4,688

### CAFETERIA

During the year 84,352 visitors to the Museum were served refreshments in the cafeteria located on the ground floor, which is not



operated by the Museum, but is under the management of a concessionaire.

Herewith are also submitted financial statements, lists of accessions, names of members, etc.

D. C. DAVIES, Director.

## ATTENDANCE STATISTICS AND DOOR RECEIPTS

FROM JANUARY 1, 1927 TO DECEMBER 31, 1927

Total Attendance.....		1,043,546
Paid Attendance.....	144,443	
Free Admissions on Pay Days:		
Students.....	11,471	
School Children.....	53,021	
Teachers.....	3,000	
Members.....	1,324	
Special (including attendance account National Safety Council Exercises at Soldier Field, October 5, 1927)	30,714	
Admissions on Free Days:		
Thursdays (52).....	121,573	
Saturdays (53).....	227,862	
Sundays (52).....	450,138	
<hr/>		
Highest Attendance on any day (October 5, 1927).....	31,085	
Lowest Attendance on any day (December 19, 1927).....	173	
Highest Paid Attendance (September 5, 1927).....	7,971	
Average Daily Admissions (365 days).....	2,859	
Average Paid Admissions (208 days).....	694	
Number of Guides sold.....	7,481	
Number of Articles checked.....	20,887	
Number of Picture Postal Cards sold.....	105,281	
Sales of Publications, Leaflets, Handbooks and Photographs	\$3,467.91	

## GENERAL FUND

## STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS

AT DECEMBER 31, 1927

Overdraft, December 31, 1926.....	\$	586.86
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## RECEIPTS

Income—Endowment, General, Miscellaneous and		
Door Receipts.....	\$	311,318.48
South Park Commissioners.....		192,582.08
Sundry Receipts.....		28,310.90
Memberships.....		66,655.00
Contributions.....		341,647.92
Securities Sold and Matured.....		516,970.99
Bank Loans.....		212,600.00
		<u>1,670,085.37</u>
		\$1,669,498.51

## DISBURSEMENTS

Operating Expenses.....	\$	515,401.98
Expeditions.....		111,095.62
Collections Purchased.....		46,586.03
Furniture and Fixtures.....		50,074.79
Securities Purchased.....		643,105.40
Annuities on Contingent Gifts.....		39,665.00
Additions to Building and Equipment.....		151,935.86
Bank Loans Repaid.....		69,348.00
		<u>\$1,627,212.68</u>
Transferred to Sinking Fund.....		10,000.00
		<u>1,637,212.68</u>
Balance, December 31, 1927.....	\$	32,285.83

### THE N. W. HARRIS PUBLIC SCHOOL EXTENSION

#### STATEMENT OF INCOME AND EXPENSES FOR THE YEAR 1927

Interest and Dividends on Investments .....	\$ 21,604.28
Operating Expenses .....	22,730.05
Excess of Expenses over Income .....	\$ 1,125.77

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### STANLEY FIELD PLANT REPRODUCTION FUND

#### STATEMENT OF INCOME AND EXPENSES FOR THE YEAR 1927

Balance, December 31, 1926 .....	\$ 533.65
Contributions by Stanley Field during 1927 .....	16,654.32
	\$ 17,187.97
Operating Expenses—1927 .....	17,001.80
Balance, December 31, 1927 .....	\$ 186.14

## ACCESSIONS

## DEPARTMENT OF ANTHROPOLOGY

- ABBOTT, J. M., Webb, Arizona.  
1 small stone mortar—Webb, Cochise County, southern Arizona (gift).
- ADAMS, EVERED N., Cornish, Colorado.  
37 prehistoric flint implements, chiefly arrowheads—Weld County, Colorado (gift).
- AYER, EDWARD E., Chicago.  
3 pewter tea-pots inlaid with designs in brass and copper—China (gift).  
7 pewter objects: figure candlesticks, 2 censers in shapes of phoenixes, 1 tea-pot of coconut shell mounted on pewter, 1 tazza engraved with floral designs, 1 bowl lined with crackled porcelain, and 1 cylindrical vessel in three compartments with brass inlays—South China (gift).  
7 pewter objects: 1 altar set of 5 pieces, 1 pilgrim's bottle with copper inlays, 1 round box with scene in brass inlays, 1 octagonal box with Eight Immortals in brass, 2 octagonal water ewers, 1 cash box with figures in brass—China (gift).  
4 pewter objects: 1 pair of candlesticks in shape of elephants, 2 candlesticks in shape of figures, 1 square chafing dish—China (gift).  
1 child's beaded buckskin coat with 1 pair of moccasins and belt—Plains Indians, United States (gift).
- AYER, MRS. EDWARD EVERETT, Chicago.  
2 objects of pewter: 1 statuette of Buddhist saint (Arhat), Ming period, and 1 figure of cat, 18th century—China and Japan—(gift).  
13 pieces of decorated pottery—Pueblos, Toltecs, and Nazca, Southwest United States, Mexico, and Peru (gift).
- BAHR, A. W., New York City.  
1 carved slab from funerary chamber of Han period (second century A.D.)—Shantung, China (gift).
- BENJAMIN, JESSE E., Clinton, Iowa.  
15 ethnological objects: 2 bows, 12 arrows, and 1 alcalde staff—Mexico City, Mexico (gift).
- CALHOUN, MRS. WILLIAM J., Peking, China.  
Set of blackwood figures of the Eight Immortals inlaid with silver wire—China (gift).
- CATON-THOMPSON, MISS GERTRUDE, British School of Archaeology, Egypt.  
About 100 prehistoric flint implements—Fayum Desert, Egypt.
- DRUMMOND, DR. I. W., New York City.  
5 carved amber beads—Lake Guatavita, Colombia, South America (gift).
- EGGERS, HERMAN, Hamburg, Germany.  
8 archaeological objects: 1 pottery beaker, 1 limestone image, 1 llama-skin robe, 1 silver bell, 1 silver vessel, 1 bone spoon, 1 string of turquoise beads, 1 copper hatchet—Inca, Chiu-chiu, Chile (gift).
- ERICKSON, DAVID A., Chicago.  
1 almost complete human skeleton found in excavations on Chestnut Street—Scandinavian, Chicago.
- FERNBACH, ROBERT, Chicago.  
1 copper battle-axe—Yaqui, Mexico (gift).
- FIELD, HENRY, Chicago.  
2 casts: 1 of new reconstruction of *Eoanthropus dawsoni* and endocranial cast of the same by Professor G. Elliot Smith—England (gift).  
3 casts: 1 of Neanderthal cranium from Podbada, 1 endocranial

cast of same, and cast of Neanderthal frontal bone fragment from Krapina—Podbada near Prague, and Krapina, Yugoslavia (gift).

- 200 prehistoric flint implements—North Arabian Desert between Jerusalem and Baghdad (gift).

#### FIELD MUSEUM OF NATURAL HISTORY

Collected by Ralph Linton, leader of Captain Marshall Field Expedition to Madagascar:

- 280 specimens: gold and silver jewelry—Sakalava, Madagascar.

- 980 ethnological objects: textiles, baskets, mats, pillows, implements, weapons, etc.—Madagascar.

Collected by Commander D. B. MacMillan, leader of Rawson-MacMillan Subarctic Expedition:

- 42 objects: clothing, dolls, bird-skin mats, knife, beads, models of boats, and steatite figures of animals—Eskimo, Greenland.

Collected by H. W. Nichols (Captain Marshall Field Brazilian Expedition):

- 23 archaeological objects: pottery sherds, textile fragments, cordage, part of basket, arrow shafts, wooden llama bit and handle, chipped flints, maize cobs—from Inca burial place and kitchen middens, Chiu-chiu, Chile.

Collected by John Borden, leader of Borden-Field Museum Alaska-Arctic Expedition:

- 533 ethnological and archaeological objects: clothing, weapons, pottery, stone vessels, implements of ivory, bone, jade and flint, copper and iron, etc.—Eskimo, Alaska and Antarctic Regions of Canada.

Collected by J. Eric Thompson, leader of Captain Marshall Field Expedition to British Honduras:

- 20 ethnological and archaeological objects: 1 loom, 1 spindle, 2 blouses, 2 haversacks,—Kekchi; 6 clay heads of figurine whistles, 1 figurine whistle with seated figure, 3 axe-heads, 1 jade pendant in shape of human head—Maya of Old Empire; 2 gourd

carriers,—Maya; 1 hollow clay head,—San Pedro, Sula, Honduras—Maya and Kekchi, British Honduras, Republic of Honduras, and Guatemala.

Collected by C. C. Sanborn (Captain Marshall Field Brazilian Expedition):

- 1 prehistoric stone implement—Passo Ibanez, Santa Cruz, Patagonia.

Purchases:

- 1 prehistoric skeleton of Magdalenian epoch—Le Cap Blanc, Laussel, France, from M. Grimaud.

- 100 prehistoric flint implements—Northern France, from A. Commont, collector.

- 1 ancient mariner's compass—China, from Mrs. Ralph M. Easley.

- 25 objects: 22 ancient skulls, detached bones, sherds of pottery from burial caves—Guindulman Bay, Bohol, Philippines, from Emerson B. Christie, collector.

- 400 ethnological objects: spears, clubs, boomerangs, spear-throwers, tomahawks, shields, bowls, fire-sticks, message sticks, incised shell work, hair belts, spindles, ceremonial slabs and boards—West Australia, from J. F. Connelly.

- 155 ethnological objects: clothing, ornaments, charms, implements, birchbark vessels, bags and pouches—Montagnais, Labrador, from Dr. Frank G. Speck, collector.

- 16 ethnological objects: spoons, pouches, leggings, spinning top, pipe cleaners, etc.—Montagnais-Naskapi, Labrador, from Dr. Frank G. Speck, collector.

- 20 archaeological objects: 1 sculptured stone head, 2 painted pottery vessels, 1 jade amulet, 1 jade ear-plug, 5 jade beads, 2 halves of jade pebble, 1 obsidian nucleus, 1 chloromelanite celt, 1 clay Toltec head, 1 clay paint pot, 1 clay pot, etc.—Mexico, Guatemala, and Honduras, from from S. G. Morley, collector.

#### FIELD MUSEUM-OXFORD UNIVERSITY JOINT EXPEDITION (Captain Marshall Field Fund).

About 13 objects: gold finger ring,

gold pin, gold beads, 2 marble statuettes, 5 clay figures, 3 strings of beads, 3 bronze rings, pieces of coral and various beads, fragments of painted pottery—Kish, Mesopotamia.

- 1 inscribed tablet concerning a sale of land at Kish, dated in the sixth year of the Sinmuballit, fifth king of the first Babylonian dynasty (2087-67 B.C.)—Kish, Mesopotamia.

- 1,117 objects: pottery, bone, shell, beads, necklaces, and bronze implements—Kish, Mesopotamia.

GOODSPEED, MRS. CHARLES B., Chicago.

Complete dress of Mongol woman with gold-plated silver jewelry inlaid with turquoise and coral—Mongols, Urga, Mongolia (gift).

GÖTEBURG MUSEUM, Sweden (Baron Nordenskiöld, collector).

- 105 ethnological objects: bows, arrows, war-clubs, bark fabrics, spindles, necklaces, ornaments, bags, baskets, musical instruments, feather head-dress—Brazil and Bolivia, South America (exchange).

GROW AND CUTTLE, Chicago.

- 10 archaeological objects: 1 celadon plate, 1 celadon cylindrical jar, 1 figure carved from root, 7 mortuary clay figures—China (gift).

- 2 objects: 1 vase carved from tree-root and 1 wooden Ju-i sceptre carved in open work and relief—China (gift).

HARRIS, A. B. B., Chicago.

- 1 prehistoric grooved hammer—southern Illinois (gift).

HUGHES, MISS C. AMELIA, Chicago.

- 1 basket—Apache, New Mexico or Arizona (gift).

HUGHES, THOMAS S., Chicago.

- 28 archaeological objects: 3 strands of glazed beads, 1 Ushebti figure, 1 alabaster jar, 7 scarabs,—Egypt; 2 Tanagra heads, 6 pieces of decorated pottery—Greece; 3

tear bottles, 4 fragments of colored glass, and 1 lamp with figure-scene in relief, Roman—Egypt, Greece, and Italy (gift).

ITO, T., Chicago.

- 1 ancient inkstone with designs in gold lacquer—Japan (gift).

McGOVERN, WILLIAM M., Chicago.

- 100 ethnological objects: domestic utensils, baskets, weapons, paddles, and musical instruments—Brazil and Colombia, South America (gift).

MEAD, MRS. ALMA, Chicago.

- 1 birchbark basket with flowers in porcupine quill work—Northern Plains Tribes, United States (gift).

MILLER, JAMES EDGAR, Chicago.

- 1 robe with designs painted in black—Moro, Philippine Islands (gift).

O'HARA, MISS M., Highland Park, Illinois.

- 1 old woolen blanket with stripes in blue, pink, and brown, formerly in possession of Spotted Tail, chief of Rosebud Sioux—Navaho, Arizona (gift).

PATTEN, HENRY J., Chicago.

- 12 inscribed clay tablets of the Ur and Larsa dynasties—Mesopotamia (gift).

PECK, MRS. WALTER L., Chicago.

- 1 grass-woven bag with drawing string—Aleutian Islands, Alaska (gift).

WILLARD-JONES, FATHER, Kenosha, Wisconsin.

- 1 woman's dress of elk-skin decorated at top and bottom with colored beads and fringe—Sioux, Flandreau, South Dakota (gift).

WITTE, MRS. LOUIS, Wever, Iowa.

- 1 prehistoric grooved stone axe—Green Bay Township, Lee County, Iowa (gift).

WOOD, PROFESSOR F. E., Chicago.

- 2 fragmentary prehistoric pottery vessels—Mutsu Province, Hondo, Japan (gift).



HARD WOOD PORTRAIT STATUE OF A YOUNG WOMAN  
Bara Tribe, Madagascar  
Captain Marshall Field Expedition to Madagascar  
One-third actual size





## DEPARTMENT OF BOTANY

## AMERICAN WALNUT MANUFACTURERS ASSOCIATION, Chicago.

4 wood specimens (gift).

## BENKE, H. C., Chicago.

238 herbarium specimens (gift).

106 duplicate specimens (gift).

## BLAKE, Dr. S. F., Washington, D. C.

2 herbarium specimens (gift).

## BLETSCH, W. E., Highland Park, Illinois.

18 wood specimens (gift).

## BOISE-PAYETTE LUMBER COMPANY, Boise, Idaho.

4 wood specimens (gift).

## BOTANISCHE GARTEN UND MUSEUM, Berlin-Dahlem, Germany.

20 herbarium specimens (exchange).

## CANADIAN PACIFIC RAILWAY, Montreal, Canada, E. R. Bruce, Director of Exhibits.

1 economic specimen, stalks of rye (gift).

## CHAMBERLAIN, PROFESSOR C. J., University of Chicago.

12 herbarium specimens (gift).

## CLARKSON, MRS. RALPH, Chicago.

1 herbarium specimen (gift).

## DAHLGREN, DR. B. E., Chicago.

10 economic specimens, seeds of palms (gift).

## DICKINSON, ALBERT, COMPANY, seed merchants, Chicago.

1 economic specimen, alfalfa seeds (gift).

## DUNGAN, PROFESSOR G. H., University of Illinois, Urbana, Illinois.

2 economic specimens, 6 ears of Krug and Reid Yellow Dent Corn (gift).

## DURHAM, O. C., Indianapolis, Indiana.

1 herbarium specimen (gift).

## EPLING, DR. CARL, University of California, Southern Branch, Los Angeles.

42 herbarium specimens, photos of plants (gift).

## FIELD, MRS. STANLEY, Chicago.

2 herbarium specimens (gift).

## FIELD MUSEUM OF NATURAL HISTORY.

Collected by Miss Francis Ames (Borden-Field Museum Alaska-Arctic Expedition, 1927):

106 herbarium specimens.

Collected by Ralph Linton (Captain Marshall Field Expedition to Madagascar, 1927):

1 economic specimen, palm, leaf and section, spadix and section, raffia.

Collected by J. F. Macbride (Field Museum Expedition in Illinois and Indiana, 1927):

200 herbarium specimens.

Collected by H. W. Nichols and H. Eggers (Captain Marshall Field Brazilian Expedition, 1926):

14 herbarium specimens.

Collected by Elmer S. Riggs (Captain Marshall Field Paleontological Expedition, 1927, Argentina):

29 herbarium specimens.

Collected by C. S. Sewall and A. C. Weed (Rawson-MacMillan Subarctic Expedition, 1926):

265 herbarium specimens.

181 duplicate specimens.

Collected by C. S. Sewall (Rawson-MacMillan Subarctic Expedition, 1927):

236 herbarium specimens.

Collected by A. Weberbauer (Captain Marshall Field Expedition to the Peruvian Andes, 1927):

152 herbarium specimens.

488 duplicate specimens.

## Stanley Field Plant Reproduction Laboratories:

13 models and reproductions of plants.

## Purchases:

5,283 herbarium specimens.

**GARFIELD PARK CONSERVATORY, Chicago.**

- 1 economic specimen, Cycad cone (gift).
- 15 herbarium specimens (gift).

**GLENDORA CHAMBER OF COMMERCE, Glendora, California.**

- 1 wood specimen (gift).

**GRAY HERBARIUM, Cambridge, Mass.**

- 118 herbarium specimens (exchange).
- 10 duplicate specimens (exchange).

**GREAT WESTERN SUGAR COMPANY, Fort Collins, Colorado.**

- 1 economic specimen, 16 samples of beet sugar factory products (gift).

**GRONEMANN, C. F., Elgin, Illinois.**

- 1 herbarium specimen (gift).
- 1 duplicate specimen (gift).

**HALL, PROFESSOR H. M., University of California, Berkeley, California.**

- 6 herbarium specimens, photos of *Oenotheras* (gift).

**HELLMAYR, DR. C. E., Chicago.**

- 1 herbarium specimen (gift).

**HENDRICKSON, W. S., Chicago.**

- 1 economic specimen, hickory nuts (gift).

**IMPERIAL FORESTRY INSTITUTE, Oxford, England.**

- 94 herbarium specimens (exchange).

**JENSEN, MRS. JENS, Ravinia, Illinois.**

- 1 wood specimen (gift).

**JOHNSTON, DR. I. M., Cambridge, Massachusetts.**

- 8 herbarium specimens, photos of Boraginaceous plants (gift).

**LANGDON, PROFESSOR S., Oxford, England.**

- 1 economic specimen, wheat kernels excavated at Jemdet Nasr (gift).

**McGILL, W. J., Whiting, Indiana.**

- 1 economic specimen, leguminous vine (gift).

**MAHOGANY ASSOCIATION, New York City.**

- 1 wood specimen, 12 panels of mahogany (gift).

**MEYERS, M. T., Ohio State University, Columbus, Ohio.**

- 2 economic specimens, Leaming and Clarage corn (gift).

**PERCIVAL, SIR JOHN, Berks, England.**

- 5 economic specimens, samples of Rivet wheat (gift).

**PHILIPPS, O. F., Chairman Board of Review, Bureau of Agricultural Economics, Chicago.**

- 9 economic specimens, various wheat grains (gift).

**PRAY, L. L., Chicago.**

- 2 reproductions of mushrooms (gift).

**RAKUDA WOOD PRODUCTS COMPANY, Pittsburgh.**

- 2 wood specimens (gift).

**RECORD, PROFESSOR S. J., Yale University, New Haven, Connecticut.**

- 1 economic specimen, seeds of Palmetto (gift).
- 650 herbarium specimens (gift).
- 150 wood specimens (gift).

**ROGERS, J. M., Gainesville, Florida.**

- 1 economic specimen, 6 ears of Yellow Cuban Flint corn (gift).

**ROYAL BOTANIC GARDENS, Kew, England.**

- 334 herbarium specimens (exchange).

**SHERFF, DR. E. E., Chicago.**

- 3,039 herbarium specimens (gift).

**STATION AGRICOLE ET ECOLE d'AGRICULTURE DE L'IVOIROINE, Tamatave, Madagascar.**

- 3 economic specimens, palm seeds (exchange).

**UNITED STATES DEPARTMENT OF AGRICULTURE, Washington, D. C.**

- 20 economic specimens, various barley heads and seed rice (gift).

## UNITED STATES NATIONAL MUSEUM, SMITHSONIAN INSTITUTION, Washington, D. C.

3,019 herbarium specimens (exchange).

## UNIVERSITY OF CALIFORNIA, Department of Botany, Berkeley, California.

125 herbarium specimens (exchange).

## VAN KEPPEL, JOHN, Harvey, Illinois.

1 economic specimen, flax (gift).

## VICTORIN, FRERE MARIE, University of Montreal, Montreal, Canada.

262 herbarium specimens (exchange)

## WHEELER, H. E., University, Alabama.

17 herbarium specimens (gift).

## DEPARTMENT OF GEOLOGY

## ABBOTT, J. M., Webb, Arizona.

1 specimen fossil wood—Adamana, Arizona (gift).

1 specimen organic pebble near Los Angeles, (California gift).

1 specimen fossil coral—Whiteside County, Illinois (gift).

## ADAMSON, GEORGE H., Chicago.

1 specimen metallic beryllium (gift).

6 specimens fossil coral—Slocum Lake, Illinois (gift).

## ARNOLD, FRANCIS M., Chicago.

1 specimen rainbow quartz—Brazil (gift).

1 specimen phantom quartz—Brazil (gift).

1 specimen mossy quartz—Brazil (gift).

## ASSOCIATION OF MINE OWNERS, Tokyo, Japan, through courtesy of Imperial Japanese Commission to Philadelphia Sesquicentennial Exposition.

26 specimens gold, silver, copper and iron ores—Japan (gift).

## BOEDEKER, WILLIAM, Chicago.

10 specimens salt and borax—Hanover, Germany (gift).

## CHALMERS, WILLIAM J., Chicago.

5 specimens beryl—Brown's Creek, Buena Vista, Colorado (gift).

1 specimen hatchettolite Hybla, Ontario, Canada (gift).

26 specimens crystallized minerals—various localities (gift).

24 specimens crystallized minerals—Italy (gift).

7 specimens crystallized minerals—Maine and Nevada (gift).

## CITY OF CHICAGO, Bureau of Streets

4 specimens asphalt and sand—various localities (exchange).

## COAN, H. W., Chicago.

1 specimen clay concretion—Bellwood, Illinois (gift).

## CONNELLY, MISS FRANCES, Perth West Australia.

1 specimen fossil Pelecypod—Central Queensland, Australia (gift).

## CONNELLY, JOHN F., Perth, West Australia.

1 specimen (15 grams) of the Tieraco meteorite—West Australia (gift)

2 photographs of the Tieraco meteorite—(gift).

## COOMARASWAMY, A. K., Boston.

19 prints illustrating gem mining in Ceylon, India—(gift).

## CORDY LAND COMPANY, Mellen, Wisconsin.

2 specimens black gabbro—Mellen, Wisconsin—(gift).

## DIAS, COLONEL HONORIO, Pocos de Caldas, Brazil.

3 photographs illustrating zirkite deposits—Cascata, São Paulo, Brazil—(gift).

## DOUGLASS, ELLEN H., New York City.

Coral set, consisting of bracelets, breast pin and earrings—Italy (gift).

DRUMMOND, I. W., New York City.

- 4 specimens amber in coal—Navajo Mine, Gallup, New Mexico (gift).

EGGERS, HERMAN, Hamburg, Germany.

- 13 prints of scenes in the Atacama Desert, Chile—(gift).

FAIRBROTHER, R. L., Quincy, Illinois.

- 1 specimen folded hematite, Lake Superior—(gift).

FIELD MUSEUM OF NATURAL HISTORY.

Collected by O. C. Farrington:

- 60 specimens minerals—Maine.

Collected by Barney Goodspeed, (Alexander Revell-Field Museum Expedition):

- 1 specimen rolled pebble of volcanic rock—Unga Island, Alaska.

Collected by Ralph Linton (Captain Marshall Field Expedition to Madagascar):

- 1 specimen aquamarine—Bed of River Mitsikivy, Province of Vakinankaratra, Madagascar.

- 1 specimen aquamarine and 1 specimen beryl—Province of Imerina, Madagascar.

- 42 specimens garnets—Madagascar.

Collected by J. H. C. Martens (Rawson-MacMillan Subarctic Expedition, 1926):

- 580 specimens minerals and rocks—various localities.

Collected by H. W. Nichols (Captain Marshall Field Brazilian Expedition, 1926-27):

- 55 specimens ores, minerals and fossils—Tofo and Potrerillos, Chile.

- 124 specimens ores, minerals and fossils—North Chile.

- 85 specimens ores and minerals—Bolivia.

- 44 specimens minerals and fossils—Bolivia.

Collected by H. W. Nichols:

- 2 specimens telluride gold ore—Kirkland Lake, Ontario.

- 1 specimen peat—Antioch, Illinois.

Collected by Third Asiatic Expedition of American Museum of Natural History with Field Museum co-operating:

- 38 specimens fossil Glires—Mongolia.

- 28 specimens fossil Artiodactyls—Mongolia.

- 16 specimens fossil Perissodactyls—Mongolia.

- 2 specimens fossil Insectivores—Mongolia.

- 3 specimens fossil Notoungulata—Mongolia.

- 4 specimens fossil Carnivora—Mongolia.

- 3 specimens fossil Proboscidea—Mongolia.

Purchases:

- 3 specimens stalagmites—Italy.

- Skull, jaws and partial skeleton of Mastodon—Mount Ayr, Indiana.

- 1 specimen ammonite—Kansas.

FRANK, MRS. SAM, Waterloo, Iowa.

- 1 specimen fossil cephalopod—Waterloo, Iowa (gift).

GERHARDT, PAUL, Staley, North Carolina.

- 1 specimen talc—Staley, North Carolina (gift).

GLYNN, PAUL, Chicago.

- 2 specimens glacial boulders—Monterey, Pulaski County, Indiana (gift).

HEMSLEY, ETHAN, Chicago.

- 1 specimen fossil coral—Dubuque, Iowa (gift).

HILL, MARCUS STOW, Chicago.

- 1 specimen sphagnum—Esthonia (gift).

JONES, ROY B., Wichita Falls, Texas.

- 1 specimen oil sand weighing 450 pounds—Electra, Wichita County, Texas (gift).

KELLY, P. A., Chicago.

- 3 specimens minerals—Colorado (gift).

LEININGER, DICK, Chicago.

- 1 specimen silicified wood—Ferry, Montana (gift).

LIEBERZ, HERMAN, Brookfield, Illinois.

- 2 specimens fossil coral—Brookfield, Illinois (gift).

- 2 specimens fossil coral—Brookfield, Illinois (exchange).
- LICEO DE COSTA RICA, San Jose, Costa Rica.  
13 specimens minerals and rocks—Costa Rica (gift).
- MARYOTT, FRED, Carrizozo, New Mexico.  
3 specimens bentonite—Española, New Mexico (gift).
- MOORE, E. T., St. Charles, Illinois.  
2 specimens manganese ore—Chilton, Carter County, Missouri (gift).
- MUIR, JOHN R., Chicago.  
1 specimen fossil trilobite (*Calymene niagarensis*)—Illinois (gift).
- NEVEL, W. D., Andover, Maine.  
15 photographs of scenes in South America—(gift).
- O'BRIEN, GEORGE F., East Cedar Rapids, Iowa.  
1 specimen crystallized galena—Madison County, Missouri (gift).
- O'HARA, M. A., Winnetka, Illinois.  
1 specimen *Astylospongia praemorsa* (gift).
- OLAS, MONTE, Chicago.  
2 specimens enargite—Swift Creek, British Columbia (gift).
- PAVEY, BILL, Winnetka, Illinois.  
1 specimen sand concretion—near Frankfort, Michigan (gift).
- PITTS, W. B., Sunnyvale, California.  
2 specimens chrysoprase—near Porterville, California (gift).  
3 specimens polished kinradite—Santa Clara County, California (gift).  
3 specimens polished jasper—Salmon City, Idaho (gift).  
5 specimens minerals—various localities (gift).  
5 specimens rocks and fossils—various localities (gift).
- SCHMIDT, KARL P., Chicago.  
1 specimen *Ensis schmidtii*—Suffolk, Virginia (gift).
- SCHNEIDER, MRS. I. S., Chicago.  
8 specimens minerals—various localities (gift).  
1 specimen fossil fern—(gift).
- SCHOENFELDT, FRANK, Oak Park, Illinois.  
1 specimen concentrically stained sandstone—Elkhorn, Wisconsin (gift).
- SCOTT, G. S., Timmins, Ontario, Canada.  
5 specimens minerals—various localities (gift).
- SHARPE, MISS MINNIE, Chicago.  
1 specimen stalactite—Wind Cave, South Dakota (gift).
- SIMMS, S. C., Chicago.  
Amber pendant enclosing fossil spider—(gift).
- SMERZ, FRANK AND THOMAS, Braden, Illinois.  
1 specimen fossil coral—Braden, Illinois (gift).  
8 specimens fossil ferns—Braden, Illinois (gift).
- STANDARD OIL COMPANY (Indiana), Chicago.  
4 specimens wax—(gift).  
20 specimens oils—(gift).  
51 specimens decorative candles—(gift).
- TIMBERLAKE, DAVID, Chicago.  
1 specimen fossil fern—(gift).
- UNITED STATES NATIONAL MUSEUM, Washington, D. C.  
3 photographs of a mounted skeleton of *Brontotherium hatcheri* (gift).  
261 specimens fossil plants—various localities (exchange).
- UNIVERSITY OF ARIZONA, Tucson, Arizona.  
10 specimens raw and treated zonolite—Libby, Montana (exchange).
- WENDLER, C., Geneva, Switzerland.  
Powder and section of the Cincinnati meteorite—Cincinnati, Ohio (exchange).  
2 fragments with crust of the Garraf meteorite—Garraf, Barcelona, Spain (exchange).

## DEPARTMENT OF ZOOLOGY

ADAM, OSCAR, Porto Aguirre, Misiones, Argentina.

- 1 lizard, 19 snakes—Iguazu Falls, Misiones, Argentina (gift).

AMERICAN MUSEUM OF NATURAL HISTORY, New York City.

- 1 cast of African frog, 1 cast of New Zealand tuatera (exchange).
- 1 bird—Manaos, Brazil (exchange).
- 1 lizard—Palamba, Peru (exchange).

APPLEBAUM, A. A., Chicago.

- 1 spider—Honduras? (gift).
- 1 lizard (gift).

ASTOR, LORD, London, England.

- 2 red deer, 1 mounted "cromie" head—Island of Jura, Scotland (gift).

ATLANTIC AND PACIFIC TEA COMPANY, Chicago.

- 1 boa constrictor (gift).

BARBOUR, DR. THOMAS, Cambridge, Massachusetts.

- 13 frogs, 20 lizards—Soledad, Cienfuegos, Cuba (gift).
- 4 chameleons—Tanganyika Territory, Africa (gift).
- 3 frogs, 1 snake, 81 lizards—Annam, Indo-China (gift).

BEBB, HERBERT, Chicago.

- 1 beetle—Michigan (gift).

BERG, MISS L., Evanston, Illinois.

- 1 cricket, 2 beetles, 1 lizard—Benkulen, Sumatra (gift).

BISHOP, S. C., Albany, New York.

- 1 fish, 1 snake, 11 lizards—Tela, Honduras (gift).

BLANCHARD, DR. F. N., Ann Arbor, Michigan.

- 2 snakes—Michigan and California (gift).

BOGEN, DON A., Kansas City, Missouri.

- 1 Yorkshire canary (gift).

BOOTH, O. E., Des Moines, Iowa.

- 2 butterflies—Des Moines, Iowa (exchange).

BORDEN, JOHN, Chicago.

- 1 walrus skull—Alaska (gift).

BOYLES, WILLIAM B., Chicago.

- 1 salamander—Algonquin, Illinois (gift).

BRAITHWAITE, WILLIAM, Dowagiac, Michigan.

- 1 honey bee's nest—Dowagiac, Michigan (gift).

BRITISH MUSEUM (NATURAL HISTORY), London, England.

- 297 mammals—Asia, Africa, South America (exchange).

BURT, CHARLES E., Ann Arbor, Michigan.

- 2 salamanders, 4 frogs, 16 lizards, 5 snakes—various localities (gift).
- 12 lizards—various localities (exchange).

BUTLER, A. L., Horsham, Sussex, England.

- 1 hummingbird—San Pedro, Peru (exchange).

CHALMERS, W. J., Chicago.

- 1 watercolor of Australian birds (gift).

CHAPMAN, M. F., Inglewood, California.

- 2 chinchillas—South America (gift).

CLEGG, W. G., Delamere, England.

- 3 capercaillie, 3 black grouse, 6 ptarmigan—Scotland (gift).

COALE, MRS. IRMA B., Highland Park, Illinois.

- 7 butterflies—Japan (gift).
- 181 butterflies, 17 moths—Paraguay (gift).

CONNELLY, J. F., Perth, West Australia.

- 140 shells—Coast of West Australia (gift).

CONNOR, DR. D. F., Chicago.

- 1 mounted swan skeleton (gift).

CONOVER, BOARDMAN, Chicago.

- 1 ringed-neck duck—Illinois (gift).

- 4 partial bird skeletons—Germany, Madagascar (gift).
- CORRAGGIO, ANTONIO**, Pismo Beach, California.
- 3 clam shells—Pismo Beach, California (gift).
- CUTTING, C. SUYDAM**, New York City.
- 108 paintings and sketches of Abyssinian birds and mammals, 8 reels motion picture film (gift).
- DAWSON, BERNARD H.**, La Plata, Argentina.
- 3 lizards—Neuquen and La Plata, Argentina (gift).
- DICKEY, DONALD R.**, Pasadena, California.
- 2 mammals—Palm Springs, California (gift).
- DURAN, DR. M. E. AND GONZALEZ, A.**, Chicago.
- 1 snake—La Estrella, Costa Rica (gift).
- ERWIN, RICHARD P.**, Boise, Idaho.
- 6 spiders—Boise, Idaho (gift).
- FIELD MUSEUM OF NATURAL HISTORY.**
- Collected by Mr. and Mrs. John Borden, Miss F. Ames, Mr. and Mrs. R. B. Slaughter and Ashley Hine (Borden-Field Museum Alaska-Arctic Expedition):
- 1 seal, 4 walrus, 4 polar bears, 4 Alaska brown bears, 111 birdskins, 1 box group accessories—Arctic Ocean, Alaska.
- Collected by H. Boardman Conover, Robert Everard and John T. Zimmer (Conover-Everard African Expedition):
- 238 mammal skins and skulls, 1 white rhino skeleton, 578 birds, 9 nests and eggs, 1 turtle, 127 lizards, 40 snakes, 131 frogs, 58 insects—Tanganyika Territory, Belgian Congo, Uganda.
- Collected by George A. Dorsey (Department of Anthropology):
- 2 crocodile skulls—New Guinea.
- Collected by Colonel J. C. Faunthorpe (Captain Marshall Field Expedition to British India):
- 38 mammal skins and skulls—British India.
- Collected by W. H. Osgood, L. A. Fuertes, A. M. Bailey, J. E. Baum and C. S. Cutting (Field Museum-Chicago Daily News Abyssinian Expedition):
- 1,339 mammals, 2,090 birds, 2 eggs, 22 lizards, 8 snakes, 32 frogs, 2 fishes—Abyssinia.
- Collected by Edmund Heller (Captain Marshall Field African Expedition):
- 244 mammals, 6 birds, 82 lizards, 31 snakes, 24 frogs, 9 fishes, 7 invertebrates—Belgian Congo, Uganda.
- Collected by members of Museum staff (local field work):
- 33 frogs, 20 salamanders, 7 snakes, 7 turtles—Chicago Area.
- Collected by E. S. Riggs (Captain Marshall Field Paleontological Expedition to Argentina):
- 11 mammal skins and skulls, 27 lizards, 6 snakes, 5 frogs, 11 insects—Argentina.
- Collected by K. P. Schmidt and C. C. Sanborn (Captain Marshall Field Brazilian Expedition):
- 424 mammal skins and skulls, 526 birds, 5 nests and eggs, 11 turtles, 6 caimans, 157 lizards, 105 snakes, 1,145 frogs, 3,997 fishes, 153 invertebrates, 3 boxes group accessories—Argentina, Brazil, Chile, Paraguay, Uruguay.
- Collected by Robert W. Tansill (Alexander Revell-Field Museum Alaska Expedition):
- 7 Alaska brown bears, 14 birds—Alaska.
- Collected by Third Asiatic Expedition (American Museum of Natural History):
- 270 mammals—Mongolia, China.
- Collected by A. C. Weed and A. G. Rueckert (Rawson-MacMillan Subarctic Expedition):
- 2 polar bear skulls, 1 caribou skull—Sukkertoppen, Greenland.
- 1 lemming, 13 birds—Baffin Land.
- 320 insects—various localities.
- Purchases:**
- 1 African lung fish—Buddhu Coast, Uganda, Africa.
- 4 birds—Chile, Argentina.
- 4 snakes—Glendale, Arizona.



- 10 frogs, 7 turtles, 47 snakes—Imboden, Arkansas.  
 273 birds—Bolivia.  
 2 woodpeckers—São Paulo, Brazil.  
 8 birds—Chile.  
 8 turtles—Gainesville, Florida.  
 7 mammals, 1 parrot—Kashmir.  
 16 turtles, 105 lizards, 4 snakes, 14 frogs—Porto Rico.  
 2 hair seals—LaPush, Washington.  
 1 replica of great auk, 1 cast of great auk's egg.  
 7 celluloid models of salamanders, frogs and lizards.  
 1 Mexican gila monster.
- FRIESSER, JULIUS, Chicago.  
 1 woodpecker—British Guiana (gift).  
 1 giraffe skull—Uganda, Africa (gift).  
 1 moth—Chicago (gift).
- GENERAL BIOLOGICAL SUPPLY HOUSE, Chicago.  
 1 salamander—Eddyville, Illinois (gift).  
 13 roaches—Key West, Florida (gift).
- GERHARD, W. J., Chicago.  
 1 beetle—Chicago (gift).
- GOODEN, G. E., Homewood, Illinois.  
 1 snake—Homewood, Illinois (gift).
- GREEN, M. M., Ardmore, Pennsylvania.  
 5 small mammals—Oregon (gift).
- GREGORY, TAPPAN, Chicago.  
 1 least weasel skull—Illinois (gift).
- HAIDER, JUAN, Alto Parana, Misiones, Argentina.  
 1 tayra—Misiones, Argentina (gift).
- HAMMOND, JOSEPHINE, Wheaton, Illinois.  
 1 pigmy antelope—Elat, Cameroun, West Africa (gift).
- HANDY, E. E., Duluth, Minnesota.  
 1 whistling swan—Minnesota (gift).
- HINRICHS, HERMAN, Chicago.  
 1 Canadian warbler—Chicago (gift).
- JENNINGS, MRS. J. E., Chicago.  
 1 snake skin—Florida (gift).
- KENDAL, GEORGE M., Chicago.  
 1 octopus—(gift).
- KINSEY, DR. ALFRED C., Bloomington, Indiana.  
 318 gall insects and galls—Europe, North America (gift).
- LAKE, W. E., Chicago.  
 11 turtles—Pell Lake, Wisconsin (gift).
- LETL, FRANK H., Chicago.  
 3 frogs, 7 salamanders, 2 lizards, 2 snakes—Southern Illinois (gift).
- LILJEBLAD, E., Chicago.  
 12 beetles—Chicago (gift).
- LINCOLN PARK COMMISSION, Chicago.  
 1 baboon—Africa (gift).
- MCCORMICK, CYRUS, JR., Chicago.  
 4 flamingos—Cuba (gift).
- MILLER, MESSRS. RAMSEY AND WILKES, Chicago.  
 1 tarantula—Osage Hills, Oklahoma (gift).
- MILLRAY, JOE, Homewood, Illinois.  
 1 salamander—Homewood, Illinois (gift).
- COLEGIO SAN PEDRO NOLASCO, Santiago, Chile.  
 6 frogs, 12 snakes, 22 lizards—Chile (gift).
- MUSEO NACIONAL DE CHILE, Santiago, Chile.  
 1 snake, 11 frogs, 23 lizards—Chile (exchange).
- MUSEUM LAFAILLE A LA ROCHELLE, La Rochelle, France.  
 1 fish—Cameroon, West Africa (gift).
- OLSSON, AXEL, Negritos, Peru.  
 26 frogs, 18 snakes, 45 lizards—Department Piura, Peru (gift).
- ORTENBURGER, DR. A. I., Norman, Oklahoma.  
 15 frogs, 25 salamanders, 4 turtles—Arkansas and Oklahoma (gift).

OYARZUN, DR. AURELIANO, Santiago, Chile.

1 cling fish—Valparaiso, Chile (gift).

PATTERSON, COLONEL J. H., Iver, Bucks, England.

1 mounted rabbit, 1 zebra skin (gift).

RAMSEY, JACK, Matto Grosso, Brazil.

Leg bones of red wolf, Matto Grosso, Brazil (gift).

RUCKDESCHEL, E. B., Chicago.

1 snake—Chicago (gift).

SANDBERG, DR. KARL, Chicago.

1 goshawk—Illinois (gift).

SCHMIDT, F. J. W., Stanley, Wisconsin.

63 frogs, 5 salamanders, 19 snakes, 6 turtles—Clark County, Wisconsin (gift).

SCHMIDT, K. P., Homewood, Illinois.

1 cockroach—Homewood, Illinois (gift).

2 bugs, 25 beetles—Dune Park, Indiana (gift).

SMITH, S. G., Chicago.

1 desert tortoise—Needles, California (gift).

SOWARD, H. E., Chicago.

1 whistling swan—Custer, Michigan (gift).

SULLIVAN, DR. ARTHUR, Madison, Wisconsin.

1 emperor goose—Madison, Wisconsin (gift).

SWEETMAN, C. T., Chicago.

1 salamander—Chicago (gift).

TALIAFERRO, PROFESSOR W. H., Chicago.

1 agouti—(gift).

THOMPSON, GEORGE, Chicago.

5 turtles—Deep River, Indiana (gift).

6 insects—Chicago (gift).

UNITED STATES NATIONAL MUSEUM, Washington, D. C.

1 sparrow—La Raya, Peru (exchange).

VOLKERS, CLYDE E., Terre Haute, Indiana.

2 turtle eggs—Terre Haute, Indiana (gift).

WENTWORTH, J. R., JR., Chicago.

3 red-billed ox-peckers—Nairobi, East Africa (gift).

1 black rhinoceros skin—Tanganyika Territory, Africa (gift).

WHITE, HAROLD A., New York City.

22 large mammal skins and skulls—Gugu Mts., Arussi, Abyssinia (gift).

1 aardvark skull—Muger River, Abyssinia (gift).

WOLCOTT, A. B., Downers Grove, Illinois.

14 insects—Downers Grove, Illinois (gift).

## RAYMOND DIVISION

FIELD MUSEUM OF NATURAL HISTORY: Purchase.

30 photographs.

UNITED STATES BUREAU OF FISHERIES.

81 lantern slides (gift).

## PHOTOGRAPHY

FIELD MUSEUM OF NATURAL HISTORY.

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8,044 prints, 3,535 negatives, 2,841 lantern slides, 326 bromide enlargements.

Developed for Expeditions:

90 negatives.

Made by Ralph Linton:

93 negatives of types of people and scenes in Madagascar, 12 portraits of natives, landscapes, etc.

—Captain Marshall Field Expedition to Madagascar.

Made by Elmer S. Riggs:

244 negatives of fossils, landscapes, views, etc.—Captain Marshall Field Paleontological Expedition to Argentina and Bolivia.

Made by A. C. Weed:

253 negatives of seascapes, landscapes, natives, etc.—Rawson-

MacMillan Subarctic Expedition of Field Museum.

Made by J. T. Zimmer:

109 negatives of seascapes, village scenes, African natives and animals, etc.—Conover-Everard African Expedition of Field Museum.

RAYMOND, C. E., Chicago.

Bird's-eye view of the World's Fair by Childe Hassam.

## LIBRARY

### AFRICA:

Albany Museum, Grahamstown.  
Department of Mines and Industries, Pretoria.

Geological Society, Johannesburg.  
Institut d'Égypte, Cairo.

Ministry of Public Works, Cairo.

Natal Museum, Pietermaritzburg.

Rhodesia Museum, Bulawayo.

Rhodesia Museum, Bulawayo.

Royal Society of South Africa, Cape Town.

Société de Géographie d'Alger.

Société d'Histoire Naturelle de l'Afrique du Nord, Algeria.

Société des Sciences Naturelles du Maroc, Rabat.

South African Association for the Advancement of Sciences, Cape Town.

South African Department of Agriculture, Pretoria.

South African Museum, Cape Town.

Transvaal Museum, Pretoria.

### ARGENTINA:

Academia Nacional de Ciencias, Córdoba.

Instituto Geográfico Argentino, Buenos Aires.

Ministerio de Agricultura, Buenos Aires.

Sociedad Argentina de Ciencias Naturales, Buenos Aires.

Sociedad Científica Argentina, Buenos Aires.

Sociedad Ornitológica del Plata, Buenos Aires.

Universidad Nacional de Tucumán.

### AUSTRALIA:

Australian Museum, Sydney.

Botanic Gardens and Government Domains, Sydney.

Commonwealth of Australia, Melbourne.

Department of Agriculture, Adelaide.

Department of Agriculture, Sydney.

Department of Agriculture, Wellington.

Department of Mines, Brisbane.

Department of Mines, Sydney.

Field Naturalists' Club, Melbourne.

Forestry Commission, Sydney (gift.)

Geological Survey of New South Wales, Sydney.

Geological Survey of Western Australia, Perth.

Linnean Society of New South Wales, Sydney.

Melbourne University.

National Herbarium, South Yarra.

Ornithological Society of South Australia, Adelaide.

Public Library, Museum and Art Gallery, Adelaide.

Public Library, Museum and Art Gallery of Victoria, Melbourne.

Queensland Geological Survey, Brisbane.

Royal Geographical Society of Australasia, Brisbane.

Royal Society of Queensland, Brisbane.

Royal Society of South Australia, Adelaide.

Royal Society of Tasmania, Hobart.

Royal Society of Victoria, Melbourne.

Royal Society of Western Australia, Perth.

Royal Zoological Society of New South Wales, Sydney.

South Australian Museum, Adelaide.

Technological Museum, Sydney.

### AUSTRIA:

Akademie der Wissenschaften, Vienna.

Anthropos Administration, Vienna.

Naturhistorisches Museum, Vienna.

Zoologisch-Botanische Gesellschaft,  
Vienna.

**BELGIUM:**

Académie Royale d'Archéologie,  
Antwerp.  
Académie Royale de Belgique, Brussels.  
Direction d'Agriculture, Brussels.  
Jardin Botanique de l'Etat, Brussels.  
Musée Royal d'Histoire Naturelle de Belgique, Brussels.  
Musées Royaux du Cinquantenaire, Brussels.  
Nederlandsch Phytopathologische (Plantenziekten) Vereenigen, Ghent.  
Société Belge de Géologie, Brussels.  
Société d'Archéologie, Brussels.  
Société de Botanique, Brussels.  
Société Ornithologique de la Belgique, Brussels.  
Société Royale des Sciences, Liège.  
Université de Louvain

**BRAZIL:**

Biblioteca Nacional, Rio de Janeiro.  
Cuerpo de Ciencias, Letras e Artes, Campinas.  
Instituto de Butantan, São Paulo.  
Instituto Oswaldo Cruz, Rio de Janeiro.  
Ministerio de Agricultura, Rio de Janeiro.  
Museo Nacional, Rio de Janeiro.  
Secretaria de Agricultura, Comercio e Obras Publicas, São Paulo.  
Servico Geologico e Mineralogica, Rio de Janeiro.

**BRITISH GUIANA:**

Board of Agriculture, Georgetown.  
Forestry Department, Georgetown.  
Royal Agricultural and Commercial Society, Demara.

**CANADA:**

Department of Agriculture, Ottawa.  
Department of Agriculture, Victoria.  
Department of Mines, Ottawa.  
Department of Mines, Toronto.  
Department of the Interior, Geological Survey, Ottawa.  
Entomological Society of Ontario, Toronto.  
Horticultural Societies, Toronto.  
McGill University, Montreal.  
Nova Scotian Institute of Natural Sciences, New Brunswick.  
Provincial Museum, Toronto.  
Provincial Museum, Victoria.  
Queen's University, Kingston.

Royal Canadian Institute, Toronto.  
Royal Society of Canada, Ottawa.  
Université de Montreal.  
University of Toronto.

**CEYLON:**

Colombo Museum.  
Department of Agriculture, Colombo.  
Mineralogical Survey, Colombo.

**CHINA:**

Commercial Press Publishers, Shanghai (gift).  
Geological Survey, Pekin.  
Royal Asiatic Society of North China, Shanghai.  
Science Society of China.  
University of Nanking.

**CZECHO-SLOVAKIA:**

Académie Tchèque des Sciences, Prague.  
Deutscher Naturwissenschaftlich Medizinischer Verein für Böhmen "Lotos," Prague.

**DENMARK:**

Dansk Botanisk Forening, Copenhagen.  
Dansk Naturhistorisk Forening, Copenhagen.  
Dansk Ornithologisk Forening, Copenhagen.  
K. Bibliotek, Copenhagen.  
Naturhistorisk Forening, Copenhagen.  
Université, Copenhagen.

**ECUADOR:**

Academia Nacional de Historia, Quito.

**FEDERATED MALAY STATES:**

Federated Malay States Museum, Singapore.  
Royal Asiatic Society, Malayan Branch, Singapore.  
Sarawak Museum, Singapore.

**FIJI ISLANDS:**

Fijian Society, Suva.

**FINLAND:**

Abo Akademi.  
Societas pro Fauna et Flora Fennica, Helsingfors.

**FRANCE:**

Académie des Sciences, Paris.  
Ecole d'Anthropologie, Paris.  
Hiler Costume Library, Paris (gift).  
Musée Guimet, Paris.

Muséum National d'Histoire Naturelle, Paris.  
 Nature, Paris.  
 Société Botanique de France, Paris.  
 Société Dauphinoise d'Ethnologie et d'Anthropologie, Grenoble.  
 Société d'Ethnographie, Paris.  
 Société d'Etude des Sciences Naturelles, Reims.  
 Société d'Etudes Scientifiques, Angers.  
 Société d'Histoire Naturelle, Toulouse.  
 Société de Géographie, Paris.  
 Société des Américanistes, Paris.  
 Société des Sciences, Nancy.  
 Société des Sciences Naturelles, Ardenne.  
 Société des Sciences Naturelles de Saône-et-Loire, Chalon-sur-Saône.  
 Société Linnéenne, Bordeaux.  
 Société Nationale d'Acclimatation de France, Paris.  
 Société Nationale d'Agriculture, Sciences et Arts, Angers.  
 Société Nationale d'Horticulture de France, Paris.  
 Société Scientifique du Bourbonnais et du Centre de France, Moulins.

## GERMANY:

Akademie der Wissenschaften, Berlin.  
 Akademie der Wissenschaften, Heidelberg.  
 Bayerische Akademie der Wissenschaften, Munich.  
 Bayerische Botanische Gesellschaft, Munich.  
 Bayerische Staatsbibliothek, Munich.  
 Botanischer Garten und Botanisches Museum, Berlin.  
 Botanischer Verein der Provinz Brandenburg, Berlin.  
 Deutsche Dendrologische Gesellschaft, Bonn-Poppelsdorf.  
 Deutsche Entomologische Gesellschaft, Berlin.  
 Deutsche Gesellschaft für Anthropologie, Ethnologie und Urgeschichte, Berlin.  
 Deutsche Morgenländische Gesellschaft, Leipzig.  
 Deutscher Seefischerei Verein, Berlin.  
 Frankfurter Gesellschaft für Anthropologie, Ethnologie und Urgeschichte.  
 Friedrich Wilhelms Universität, Berlin.  
 Geographische Gesellschaft, München.  
 Georg-August-Universität, Göttingen.

Gesellschaft für Erdkunde, Berlin.  
 Gesellschaft für Erdkunde, Leipzig.  
 Hamburgische Universität.  
 Mineralogisch-Geologisches Museum, Dresden.  
 Museum für Tierkunde und Völkerkunde, Dresden.  
 Museum für Völkerkunde, Berlin.  
 Museum für Völkerkunde, Hamburg.  
 Nassauischer Verein für Naturkunde, Wiesbaden.  
 Naturforschende Gesellschaft, Freiburg.  
 Naturforschende Gesellschaft, Görlitz.  
 Naturhistorische Gesellschaft, Nürnberg.  
 Naturhistorische Verein der Preussischen Rheinlande und Westfalens, Bonn.  
 Naturwissenschaftlicher Verein, Bremen.  
 Naturwissenschaftlicher Verein, Passau.  
 Naturwissenschaftlicher Verein für Schwaben und Augsburg.  
 Ornithologische Gesellschaft in Bayern, München.  
 Sächsische Akademie der Wissenschaft, Leipzig.  
 Schlesische Gesellschaft für Vaterländische Cultur, Breslau.  
 Senckenbergische Naturforschende Gesellschaft, Frankfurt a M.  
 Thüringischer Botanischer Verein, Weimar.  
 Tübingen University.  
 Universitäts Bibliothek, Marburg.  
 Universitäts Bibliothek, München.  
 Verein für Naturkunde, Cassel.  
 Verein für Vaterländische Naturkunde, Württemberg.  
 Verein für Volkskunde, Berlin.  
 Zoologisches Museum, Berlin.

## GREAT BRITAIN:

Agricultural Experiment Station, Newcastle upon Tyne.  
 Ashmolean Museum, Oxford.  
 Ashmolean Natural History Society, Oxford.  
 Birmingham Natural History and Philosophical Society.  
 Brighton and Hove Natural History and Philosophical Society.  
 Bristol Museum.  
 British Library of Political Science, London.  
 British Museum, London.  
 British Museum (Natural History), London.  
 Cambridge Philosophical Society.



**BLACK PEPPER**

A piece of a fruiting pepper vine reproduced from nature

Installed in Hall of Plant Life (Hall 29)

Stanley Field Plant Reproduction Laboratories

One-eighth natural size



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 Department of Science and Industrial Research, London.  
 Dove Marine Laboratory, Cullercoats.  
 Fisheries Board, Edinburgh.  
 Geological Society, Edinburgh.  
 Geological Society, Liverpool.  
 Geological Survey England and Wales, London.  
 Geological Survey of Scotland, Edinburgh.  
 Geologists' Association, London.  
 Hull Municipal Museum.  
 Imperial Bureau of Entomology, London.  
 Japan Society of London.  
 Lancashire Sea Fisheries Laboratory, Liverpool.  
 Leicester Museum, Art Gallery and Library.  
 Linnean Society, London.  
 Liverpool Biological Society.  
 Liverpool Free Public Museum.  
 London School of Economics and Political Science.  
 Manchester Literary and Philosophical Society.  
 Manchester Museum.  
 Marine Biological Association, Plymouth.  
 National Indian Association, London.  
 National Museum of Wales, Cardiff.  
 Natural History Society of Glasgow.  
 Oriental Ceramic Society, London (gift).  
 Royal Anthropological Institute of Great Britain and Ireland, London.  
 Royal Asiatic Society of Great Britain and Ireland, London.  
 Royal Botanic Gardens, Edinburgh.  
 Royal Botanic Gardens, Kew.  
 Royal Colonial Institute, London.  
 Royal Cornwall Polytechnic Society, Falmouth.  
 Royal Geographical Society, London.  
 Royal Horticultural Society, London.  
 Royal Society, London.  
 Royal Society of Arts, London.  
 Royal Society of Edinburgh.  
 School of Oriental Studies, London.  
 South London Entomological and Natural History Society.  
 Speleological Society, Bristol.  
 Tring Zoological Museum.  
 Victoria and Albert Museum, London.  
 Wellcome Research Laboratories, London.  
 Zoological Society, London.

## HUNGARY:

Magyar Természettudományi Társulat, Budapest.  
 Musée National Hongrois, Budapest.  
 Royal Hungary School of Engineering, Mines and Forests, Budapest.

## INDIA:

Anthropological Society, Bombay.  
 Archaeological Department, Hyderabad.  
 Archaeological Survey, Allahabad.  
 Archaeological Survey, Burma, Rangoon.  
 Archaeological Survey, Calcutta.  
 Archaeological Survey, Madras.  
 Asiatic Society of Bengal, Calcutta.  
 Bihar and Orissa Research Society, Patna.  
 Botanical Survey, Calcutta.  
 Department of Agriculture, Bombay.  
 Department of Agriculture, Madras.  
 Department of Agriculture, Poona.  
 Department of Agriculture, Pusa.  
 Geological Survey, Calcutta.  
 Government Cinchona Plantations, Calcutta.  
 Government of India, Calcutta.  
 Government Museum, Madras.  
 Hyderabad Archaeological Society.  
 Indian Museum, Calcutta.  
 Journal of Indian Botany, Madras.  
 Royal Botanic Garden, Calcutta.  
 University of Calcutta.  
 Zoological Survey of India, Calcutta.

## IRELAND:

Belfast Natural History and Philosophical Society.  
 Royal Irish Academy, Dublin.  
 University of Dublin.

## ITALY:

Musei Zoologia e Anatomia, Genoa.  
 Musei Zoologia e Anatomia Comparata, Turin.  
 Museo Civico di Storia Naturale, Genoa.  
 R. Accademia della Scienze, Naples.  
 R. Accademia delle Scienze, Turin.  
 R. Accademia Nazionale dei Lincei, Rome.  
 R. Orto Botanico Giardino Coloniale, Palermo.  
 R. Scuola Superiore di Agricoltura, Portici.  
 R. Società Geografica Italiana, Rome.  
 Società dei Naturalisti, Naples.  
 Società di Scienze Naturali ed Economiche, Florence.  
 Società Geologica Italiana, Rome.



Società Italiana de Scienze Naturali,  
Milan.

Società Reale dei Napoli.

Società Toscana di Scienze Naturali,  
Pisa.

Ufficio Geologico d'Italia, Rome.

#### JAPAN:

Anthropological Society of Tokyo.

Department of Agriculture of For-  
mosa.

Government General, Museum of  
Chosen.

Government Research Institute, Tao-  
hoku, Formosa.

Imperial Academy of Tokyo.

Imperial Geological Society, Tokyo.

Imperial Geological Survey, Tokyo.

Imperial Household Museums, Tokyo.

Imperial University, Tokyo.

Imperial University, College of Agri-  
culture, Kyoto.

Ornithological Society, Tokyo.

Tohoku Imperial University, Sendai.

Tokyo Botanical Society.

#### JAVA:

Bataviaasch Genootschap van Kun-  
sten en Wetenschappen, Batavia.

Department of Agriculture, Buiten-  
zorg.

Encyclopaedisch Bureau, Weltevred-  
en.

Jardin Botanique, Weltevreden.

K. Natuurkundige Vereeniging in  
Nederlandsch-Indie, Weltevreden.

#### MEXICO:

Instituto Geologico de Mexico.

Museo Nacional de Arqueologia,  
Historia y Ethnografia, Mexico.

Secretaria de Agricultura y Fomen-  
to, Direccion de Antropologia,  
Mexico.

Secretaria de Educacion Publica,  
Mexico.

Sociedad Cientifica "Antonio Alzate"  
Mexico.

Sociedad de Geografia y Estadistica,  
Mexico.

Sociedad Forestal de Mexico.

Sociedad Geologica Mexicana, Mex-  
ico.

#### NETHERLANDS:

Bataafsch Genootschap der Proef-  
ondervinde lijke Wijsgegierte,  
Rotterdam.

K. Akademie van Wetenschappen,  
Amsterdam.

K. Instituut voor de Taal-Land-en

Volkenkunde van Nederlandsch  
Indie, Hague.

K. Nederlandsch Aardrijkundig Ge-  
nootschap, Amsterdam.

Leiden Museum.

Museum voor Land-en Volkenkunde  
en Maritiem Museum "Prinz  
Hendrik," Rotterdam.

Nederlandsche Phytopathologische  
Vereeniging, Wageningen.

Nederlandsch Vogelkundigen Club,  
Leiden.

Rijks Ethnographisch Museum, Lei-  
den.

Rijks Geologisch-Mineralogisches  
Museum, Leiden.

Rijks Herbarium, Leiden.

Rijks Hoogers Land-Tuin-en Bosch-  
bousschool, Wageningen.

Rijks Museum van Natuurlijke His-  
torie, Leiden.

Rijks Universiteit, Leiden.

Universiteit van Amsterdam.

#### NEW ZEALAND:

Auckland Institute and Museum,  
Wellington.

Canterbury Museum, Christchurch.

Cawthorn Institute, Nelson.

Department of Agriculture, Well-  
ington.

Department of Mines, Wellington.

Dominion Museum, Wellington.

Geological Survey, Wellington.

New Zealand Board of Science and  
Art, Wellington.

#### NORWAY:

Bergen Museums.

Ethnographical Museum of Oslo

Norges Geologiske Undersøkelse,  
Oslo.

Norsk Geologisk Forening, Oslo.

Physiographiske Forening, Oslo.

Tromsø Museum.

Zoologiske Museum, Oslo.

#### PALESTINE:

Institute of Agriculture and Natural  
History, Tel-Aviv.

Palestine Oriental Society, Jerusalem.

#### PARAGUAY:

Sociedad Cientifica, Asuncion.

#### PERU:

Revista del Archivo Nacional, Lima.

#### POLAND:

Académie Polonaise des Sciences et  
des Amis, Cracow.

Instytut nauk Antropologicznych

Towarzystwa Naukowego Warszawskiego, Warsaw.  
 Musei Polonici Historiae Naturalia, Warsaw.  
 Société Botanique de Pologne, Warsaw.

## PORTUGAL:

Academia Real Sciencias, Lisbon.  
 Biblioteca Nacional, Lisbon.  
 Universidade de Coimbra, Museu Zoológico.  
 Universidade de Lisboa, Lisbon.

## ROUMANIA:

Université de Jassy.

## RUSSIA:

Académie des Sciences, Leningrad.  
 Botanical Garden, Leningrad.  
 Institute of Economic Mineralogy and Petrography, Moscow.  
 Musée d'Anthropologie, Leningrad.  
 Musée d'Etat de la Région Industrielle Centrale, Moscow.  
 Musée Géologique de Minéralogie Pierre le Grande, Leningrad.  
 Russian Zoological Journal, Moscow.  
 Société des Amis des Sciences Naturelles, d'Anthropologie et d'Ethnographie, Moscow.  
 Société des Naturalistes, Leningrad.  
 Société Ouraliennne d'Amis des Sciences Naturelles, Ekaterinberg.

## SPAIN:

Institució Catalana d'Historia Natural, Barcelona.  
 Associació Catalana d'Antropologia, Etnologia i Prehistoria, Barcelona.  
 Junta de Ciencias Naturals, Barcelona.  
 Junta para Ampliación de Estudios e Investigaciones Científicas, Madrid.  
 Musei de Ciencias Naturales, Madrid.  
 R. Academia de Ciencias Exactas, Físicas y Naturales, Madrid.  
 Sociedad Espanola de Antropologia, Etnografia y Prehistoria, Madrid.  
 Sociedad Espanola de Historia Natural, Madrid.

## SWEDEN:

Göteborgs Botanika Trädgrad.  
 Geologiska Institutet, Stockholm.  
 K. Biblioteket, Stockholm.  
 K. Svenska Vetenskapsakademien, Stockholm.  
 K. Vetenskaps-och Vitterhets-Samhalle, Göteborg.

K. Vitterhet Historie och Antikvitets Akademien, Stockholm.  
 Lunds Universitet.

## SWITZERLAND:

Botanischer Garten, Bern.  
 Botanisches Museum, Zürich.  
 Conservatoire et Jardin Botaniques, Geneva.  
 Musée d'Histoire Naturelle, Lausanne.  
 Naturforschende Gesellschaft, Basel.  
 Naturforschende Gesellschaft, Zürich.  
 Naturhistorisches Museum, Basel.  
 Schweizerische Entomologische Gesellschaft, Bern.  
 Société Botanique, Geneva.  
 Société de Physique et d'Histoire Naturelle, Geneva.  
 Société Helvétique des Sciences Naturelles, Bern.  
 Société Neuchateloise de Géographie, Neuchatel.  
 Société Suisse d'Anthropologie et d'Ethnologie, Bern.  
 Société Zoologique, Geneva.

## URUGUAY:

Museo Nacional, Montevideo.

## VENEZUELA:

Cultura Venezolana, Caracas.  
 Museo Comercial de Venezolana, Caracas.

## WEST INDIES:

Academia Nacional de la Artes y Letras, Havana.  
 Biblioteca Nacional, Havana.  
 Department of Agriculture, Bridgetown.  
 Department of Agriculture, Kingston.  
 Insular Experiment Station, Rio Piedras.  
 Trinidad and Tobago Department of Agriculture, Port of Spain.  
 Universidad de Habana.

Alvarez, Antenor, Santiago del Estero (gift).  
 Beaux, Oscar de, Geneva.  
 Borodin, N., (gift).  
 Castellanos, Alfredo, Buenos Aires (gift).  
 Collinge, Walter E., York.  
 Dingwall, Kenneth, London (gift).  
 Dunod, Henri, Paris.  
 Dyes, W. A., Berlin (gift).  
 Frankenberg, G., Braunschweig.  
 Frankfort, H., London (gift).

Friedländer und Sohn, Berlin (gift).  
 Gladstone, Hugh S., Dumfriesshire (gift).  
 Gleerup, C. W. K., Lund.  
 Gowdey, C. C., Kingston.  
 Gumaraes, Antonio, Jr., São Paulo (gift).  
 Heim, Albert, Zürich.  
 Hertter, Guillermo, Montevideo (gift).  
 Hertzfel, Harry J. S., Brussels (gift).  
 Hornell, James, London (gift).  
 Huard, V. A., Quebec.  
 Hunke, Hugo, Berlin (gift).  
 Joicey, J. J., Witley.  
 Joyce, T. A., London.  
 Kuroda, N., Tokyo (gift).  
 Langdon, S., Oxford (gift).  
 Lecomte, Henri, Paris (gift).  
 Levy-Bruhl, Lucien, Paris.  
 Lindblom, Gerhard, Stockholm (gift).  
 Looser, Gualterio, Santiago (gift).  
 Loppe, Etienne, La Rochelle.  
 Lowe, Percy R., London.  
 Maisonneuve, Adrien, Paris.  
 Martinez, J. Hernandez, Merida.  
 Meek, Alexander, Durham.  
 Mertens, Robert, Frankfurt a M. (gift).  
 Müller, Lorenz, Munich.  
 Nándor, Gimesi, Budapest (gift).  
 Outes, Felix F., Buenos Aires.  
 Passerini, N., Florence (gift).  
 Pinto do Fonseca, José, São Paulo (gift).  
 Pittier, Henri, Caracas.  
 Richter, R. E., Frankfurt a. M.  
 Rinne, Friedrich, Leipzig.  
 Rivet, P., Paris.  
 Rodrigues da Silveira, Fernando, Rio de Janeiro (gift).  
 Roeder, Gunther, Hildesheim (gift).  
 Roth, Walter E., Christianburg.  
 Rout, Ettie A., London (gift).  
 Schinz, Hans, Zürich.  
 Schlaginhaufen, Otto, Zürich.  
 Spencer, L. J., London.  
 Soderstrom, Adolf, Upsala (gift).  
 Strand, Embrik, Riga (gift).  
 Sztolcman, Jan, Warsaw (gift).  
 Talbot, G., Witley (gift).  
 Tratz, Edward Paul, Salzburg (gift).  
 Tyties, Edward J. Mrs., London (gift).  
 Uchida, Leinosuke, Tokyo (gift).  
 Walsh, George B., Scarborough.  
 Wuelff, E. W., Leningrad.  
 Zimanyi, Karl, Budapest.

## ALABAMA:

Geological Survey, University.

## ARIZONA:

Arizona Museum, Phoenix.

## CALIFORNIA:

Agricultural Experiment Station, Berkeley.  
 Balboa Park Museum, San Diego.  
 Board of Fish and Game Commissioners, Sacramento.  
 California Academy of Sciences, San Francisco.  
 Cooper Ornithological Club, Hollywood.  
 Los Angeles Museum.  
 Natural History Museum, San Diego.  
 Pomona College, Claremont.  
 San Diego Society of Natural History.  
 San Diego Zoological Society.  
 Scripps Institution of Biological Research, La Jolla.  
 Southern California Academy of Sciences, Los Angeles.  
 Southwest Museum, Los Angeles.  
 Stanford Museum.  
 State Mining Bureau, Sacramento.  
 University of California, Berkeley.  
 University of Southern California, Los Angeles.

## COLORADO:

Agricultural Experiment Station, Fort Collins.  
 Bureau of Mines, Denver.  
 Colorado College, Colorado Springs.  
 Colorado Museum of Natural History, Denver.  
 State Agricultural College, Fort Collins.  
 State Historical and Natural History Society, Denver.

## CONNECTICUT:

Agricultural Experiment Station, New Haven.  
 Connecticut Academy of Arts and Sciences, New Haven.  
 Hartford Public Library.  
 Osborn Botanical Laboratory, New Haven.  
 State Board of Fisheries and Game, Hartford.  
 State Geological and Natural History Survey, Hartford.  
 Storrs Agricultural Experiment Station.  
 Yale University, New Haven.

## FLORIDA:

State Geological Survey, Tallahassee.

## GEORGIA:

Geological Survey, Atlanta.

**HAWAII:**

Agricultural Experiment Station,  
Honolulu.  
Bernice Pauahi Bishop Museum,  
Honolulu.  
Board of Commissioners of Agriculture  
and Forestry, Honolulu.  
Hawaiian Entomological Society,  
Honolulu.  
Hawaiian Historical Society, Honolulu.  
Hawaiian Sugar Planters' Association,  
Honolulu.  
Hawaiian Volcano Observatory, Honolulu.  
University of Hawaii, Honolulu.

**IDAHO:**

State Historical Society of Idaho,  
Boise.

**ILLINOIS:**

Agricultural Experiment Station,  
Urbana.  
Art Institute of Chicago.  
Board of Education, Chicago.  
Chicago Academy of Science.  
Chicago Historical Society.  
Consulate of Japan, Chicago.  
Division of Natural History Survey,  
Urbana.  
Forestry Service, Urbana.  
Geographic Society, Chicago.  
Hardwood Record, Chicago (gift).  
Inland Printer, Chicago (gift).  
Izaak Walton League of America,  
Chicago (gift).  
John Crerar Library, Chicago.  
Knox College, Galesburg (gift).  
Newberry Library, Chicago.  
Northwestern University, Evanston.  
Open Court Publishing Company,  
Chicago.  
State Academy of Science, Springfield.  
State Board of Agriculture, Springfield.  
State Geological Survey, Springfield.  
State Historical Library, Springfield.  
State Water Survey, Urbana.  
University of Chicago.  
University of Illinois, Urbana.

**INDIANA:**

Academy of Science, Indianapolis.  
Agricultural Experiment Station,  
Indianapolis.  
Department of Conservation, Indianapolis.  
Indiana Historical Society, Indianapolis (gift).  
Indiana University, Bloomington.

John Herron Art Institute, Indianapolis.  
Purdue University, Lafayette.  
State Board of Forestry, Indianapolis.  
University of Notre Dame.

**IOWA:**

Academy of Science, Des Moines.  
Agricultural Experiment Station,  
Ames.  
Historical, Memorial and Art Department,  
Des Moines.  
Iowa Geological Survey, Des Moines.  
Iowa Horticultural Society, Des Moines.  
University of Iowa, Iowa City.

**KANSAS:**

Agricultural Experiment Station,  
Manhattan.  
State Board of Agriculture, Topeka.  
State Geological Survey, Lawrence.  
State Historical Society, Topeka.  
University of Kansas, Lawrence.

**KENTUCKY:**

Agricultural Experiment Station,  
Louisville.  
Kentucky Geological Survey, Frankfort.

**LOUISIANA:**

Agricultural Experiment Station,  
Baton Rouge.  
Department of Conservation, Baton Rouge.

**MAINE:**

Agricultural Experiment Station,  
Orono.  
Bowdoin College, Brunswick.  
Portland Public Library.

**MARYLAND:**

Academy of Science, Baltimore.  
Agricultural Experiment Station,  
College Park.  
Enoch Pratt Free Library, Baltimore.  
Johns Hopkins University, Baltimore.

**MASSACHUSETTS:**

Agricultural Experiment Station,  
Amherst.  
American Academy of Arts and Sciences, Boston.  
American Antiquarian Society, Worcester.  
Boston Public Library.  
Harvard College, Museum of Comparative Zoology, Cambridge.

# 316 FIELD MUSEUM OF NATURAL HISTORY—REPORTS, VOL. VII

Harvard University, Arnold Arboretum, Jamaica Plain.  
 Harvard University, Gray Herbarium, Cambridge.  
 Horticultural Society, Boston.  
 Museum of Fine Arts, Boston.  
 New Bedford Free Library.  
 Peabody Institute.  
 Peabody Museum, Cambridge.  
 Peabody Museum, Salem.  
 Phillips Academy, Andover.  
 Salem Public Library.  
 Smith College, Northampton.  
 Springfield City Library Association.  
 Williams College, Williamstown

## MICHIGAN:

Agricultural Experiment Station, Agricultural College.  
 Department of Conservation, Geological Survey Division, Lansing.  
 Detroit Institute of Art.  
 Grand Rapids Public Library.  
 Michigan Academy of Science, Ann Arbor.  
 Michigan College of Mines, Houghton.  
 Michigan State Library, Lansing.  
 State Board of Agriculture, Lansing.  
 State Board of Library Commissions, Lansing.  
 Three Oaks Historical Society.  
 University of Michigan, Ann Arbor.

## MINNESOTA:

Agricultural Experiment Station, University Farm.  
 Minneapolis Institute of Arts.  
 Minnesota Geological Survey, Minneapolis.  
 Minnesota Historical Society, St. Paul.  
 Saint Paul Institute, St. Paul.  
 University of Minnesota, Minneapolis.

## MISSISSIPPI:

Agricultural Experiment Station, Agricultural College.  
 Mississippi Plant Board, Agricultural College.

## MISSOURI:

Agricultural Experiment Station, Columbia.  
 Bureau of Geology and Mines, Rolla.  
 City Art Museum, St. Louis.  
 Missouri Botanic Garden, St. Louis.  
 Missouri Historical Society, Columbia.

Missouri State Game and Fish Department, Columbia.  
 St. Louis Public Library.  
 University of Missouri, School of Mines, Rolla.  
 Washington University, St. Louis.

## MONTANA:

Agricultural Experiment Station, Bozeman.

## NEBRASKA:

Agricultural Experiment Station, Lincoln.

## NEVADA:

Agricultural Experiment Station, Reno.

## NEW JERSEY:

Agricultural Experiment Station, Trenton.  
 Department of Conservation and Development, Trenton.  
 Horticultural Society, Trenton.  
 Newark Museums Association.  
 Princeton University.

## NEW MEXICO:

Agricultural Experiment Station, Santa Fe.  
 Historical Society, Santa Fe.  
 New Mexico Museum, Santa Fe.

## NEW YORK:

Agricultural Experiment Station, Geneva.  
 American Academy in Rome, New York.  
 American Geographical Society, New York.  
 American Museum of Natural History, New York.  
 American Polish Chamber of Commerce, New York.  
 Barrett Company, Agricultural Department, New York (gift).  
 Bingham Oceanographic Collection, New York (gift).  
 Brooklyn Botanic Garden.  
 Brooklyn Institute of Arts and Sciences.  
 Buffalo Society of Natural Sciences.  
 Columbia University, New York.  
 Cooper Union for the Advancement of Science and Art, New York.  
 Cornell University, Ithaca.  
 Garden Club of America, New York.  
 Japan Society, New York.  
 Metropolitan Museum of Art, New York.

Museum of the American Indian,  
New York.  
New York Academy of Sciences,  
New York.  
New York Botanical Garden, New  
York.  
New York Historical Society, New  
York.  
New York Linnean Society, New  
York.  
New York State Library, Albany.  
Pratt Institute, New York.  
Public Library, New York.  
Rochester Academy of Science.  
Rochester Municipal Museum.  
Rockefeller Foundation, New York.  
State College of Forestry, Syracuse.  
State Museum, Albany.  
Statens Island Institute of Arts and  
Sciences, New York.  
Stone Publishing Company, New  
York.  
Tompkins-Kiel Marble Company,  
New York (gift).  
United Fruit Company, New York.  
University of the State of New York,  
Albany.  
Vassar College, Poughkeepsie.  
Zoological Society, New York.

**NORTH CAROLINA:**

Duke University, Durham.  
Geological and Economic Survey,  
Raleigh.  
Elisha Mitchell Scientific Society,  
Chapel Hill.

**NORTH DAKOTA:**

Geological Survey, University Sta-  
tion.  
State Historical Society, Bismarck.  
University of North Dakota, Uni-  
versity.

**OHIO:**

Agricultural Experiment Station,  
Wooster.  
Cincinnati Museums Association.  
Cleveland Museum of Art.  
Cleveland Museum of Natural His-  
tory.  
Cleveland Public Library.  
Denison University, Granville.  
Geological Survey, Columbus.  
Oberlin College.  
Ohio Academy of Science, Columbus.  
State Archaeological and Historical  
Society, Columbus.  
State University, Columbus.  
University of Cincinnati.  
Wilson Ornithological Club, Oberlin.

**OKLAHOMA:**

Oklahoma Academy of Science, Nor-  
man.  
Oklahoma Geological Survey, Nor-  
man.  
University of Oklahoma, Norman.

**OREGON:**

Agricultural Experiment Station,  
Corvallis.  
University of Oregon, Eugene.

**PENNSYLVANIA:**

Academy of Natural Sciences, Phila-  
delphia.  
Agricultural Experiment Station,  
Harrisburg.  
American Philosophical Society,  
Philadelphia.  
Antivenin Institute of America,  
Philadelphia.  
Bryn Mawr College.  
Bureau of Topographical and Geolog-  
ical Survey, Harrisburg.  
Carnegie Institute, Pittsburgh.  
Carnegie Library, Pittsburgh.  
Carnegie Museum, Pittsburgh.  
Delaware County Institute of Sci-  
ence, Media.  
Department of Agriculture, Harris-  
burg.  
Department of Forests and Water,  
Harrisburg.  
Dropsie College, Philadelphia.  
Engineers' Society of Western Penn-  
sylvania.  
Franklin Institute, Philadelphia.  
Lehigh University, Bethlehem.  
Pennsylvania Museum and School of  
Industrial Art, Philadelphia.  
Philadelphia College of Pharmacy.  
Philadelphia Commercial Museum.  
Sullivant Moss Society, Pittsburgh.  
University of Pennsylvania, Phila-  
delphia.  
University of Pennsylvania, Museum,  
Philadelphia.  
Wagner Free Institute of Science,  
Philadelphia.  
Wistar Institute of Anatomy and  
Biology, Philadelphia.

**PHILIPPINE ISLANDS:**

Bureau of Education, Manila.  
Department of Agriculture, Manila.  
Department of Agriculture and Nat-  
ural Resources, Manila.  
Department of Interior, Bureau of  
Science, Manila.

**SOUTH DAKOTA:**

Geological and Natural History Survey, Vermilion.  
State School of Mines, Rapid City.

**TENNESSEE:**

Academy of Science, Nashville.  
Agricultural Experiment Station, Nashville.

**TEXAS:**

Agricultural Experiment Station, College Station.  
Baylor University, Waco.  
Scientific Society, San Antonio.  
University of Texas, Austin.

**UTAH:**

Agricultural Experiment Station,

**VERMONT:**

Agricultural Experiment Station, Burlington.

**VIRGINIA:**

Agricultural Experiment Station, State Library, Richmond.  
University of Virginia, Charlottesville.

**WASHINGTON:**

Agricultural Experiment Station, Seattle.  
Department of Conservation and Development, Division of Geology, Olympia.  
Mountaineers, Seattle.  
Pacific Northwest Bird and Mammal Society, Seattle.  
Puget Sound Biological Station, Seattle.  
Washington University, Seattle.  
Washington University, Historical Society, Seattle.

**WASHINGTON, D. C.**

American Association for the Advancement of Science.  
American Association of Museums.  
American Mining Congress.  
Carnegie Endowment for International Peace (gift).  
Carnegie Institution of Washington (gift).  
Library of Congress.  
National Academy of Science.  
National Parks Bulletin.  
National Research Council.  
Pan American Union.  
Science Service.  
Smithsonian Institution.  
United States Government.  
United States National Museum.

**WEST VIRGINIA:**

Academy of Science, Morgantown.  
State Department of Agriculture, Charleston.  
West Virginia University, Morgantown.

**WISCONSIN:**

Agricultural Experiment Station, Madison.  
Beloit College.  
Geological and Natural History Survey, Madison.  
Public Museum of Milwaukee.  
State Horticultural Society, Madison.  
University of Wisconsin, Madison.  
Wisconsin Archaeological Society, Madison.

Allen, T. George, Chicago (gift).  
Allen, W. E., Berkeley, California.  
Ames, Oakes, Boston (gift).  
Ayer, Edward E., Chicago (gift).  
Baker, Frank C., Urbana, Illinois.  
Bangs, Outram, Cambridge, Massachusetts.  
Barnes, R. Magoon, Lacon, Illinois (gift).  
Bergfors, G., New York City (gift).  
Buckstaff, Ralph, Oshkosh, Wisconsin (gift).  
Cook, Harold J., Agate, Nebraska (gift).  
Davies, D. C., Chicago (gift).  
Davis, E. P., Washington, D. C. (gift).  
Degener, Otto, Honolulu.  
Essenberg, J. M., Norman, Oklahoma (gift).  
Farwell, Oliver A., Detroit (gift).  
Field, Henry, Chicago (gift).  
Field, Stanley, Chicago (gift).  
Firth, Raymond.  
Friedmann, Herbert, Amherst, Massachusetts.  
Friesser, J., Chicago (gift).  
Gerhard, W. J., Chicago (gift).  
Glessner, John J., Chicago (gift).  
Gordon, Myron, Ithaca, New York (gift).  
Greenman, Emerson, Ann Arbor, Michigan (gift).  
Gunder, J. D., Pasadena, California (gift).  
Hellmayr, C. E., Chicago (gift).  
Hubbs, Carl L., Ann Arbor, Michigan.  
Hutchinson, Mrs. Charles L., Chicago (gift).  
Jillson, Willard R., Frankfort, Kentucky (gift).  
Jones, E. T., New York City, (gift).  
Kenyon, A. S.

- Kroeber, A. L., Berkeley, California.  
Larsen, Esther L., St. Louis (gift).  
Lathrop, S. K., Cambridge, Massachusetts (gift).  
Laufer, Berthold, Chicago (gift).  
Lyon, M. W., Jr. South Bend, Indiana.  
McNair, James B., Chicago (gift).  
Osborn, Henry F., New York City.  
Osgood, Wilfred H., Chicago (gift).  
Pallister, John C., Cleveland (gift).  
Patten, Henry J., Evanston, Illinois (gift).  
Peters, James L., Cambridge, Massachusetts.  
Procter, William, Bar Harbor, Maine. (gift).  
Psota, Frank J., Chicago (gift).  
Schmidt, Karl P., Chicago (gift).  
Simms, S. C., Chicago (gift).  
Spivey, Thomas S., Beverly Hills, California (gift).  
Standley, Paul C., Washington, D. C. (gift).  
Starr, Frederick, Seattle, Washington.  
Sternberg, Charles M., Ottawa, Ontario, Canada (gift).  
Strong, R. M., Chicago (gift).  
Thompson, J. Eric, Chicago (gift).  
Todd, W. E. Clyde, Pittsburgh.  
Valentine, Hazel, Chicago (gift).  
Walker, James W., Chicago (gift).  
Walpole, Branson A., East Lansing, Michigan (gift).  
Whitlock, Herbert P., New York City (gift).  
Young, F. B., (gift).  
Zimmer, John T., Chicago (gift).



## ARTICLES OF INCORPORATION

### STATE OF ILLINOIS

DEPARTMENT OF STATE

WILLIAM H. HINRICHSSEN, *Secretary of State*

TO ALL TO WHOM THESE PRESENTS SHALL COME, GREETING:

*Whereas*, a Certificate duly signed and acknowledged having been filed in the office of the Secretary of State, on the 16th day of September, A. D. 1893, for the organization of the COLUMBIAN MUSEUM OF CHICAGO, under and in accordance with the provisions of "An Act Concerning Corporations," approved April 18, 1872, and in force July 1, 1872, and all acts amendatory thereof, a copy of which certificate is hereto attached.

*Now, therefore*, I, William H. Hinrichsen, Secretary of State of the State of Illinois, by virtue of the powers and duties vested in me by law, do hereby certify that the said COLUMBIAN MUSEUM OF CHICAGO is a legally organized Corporation under the laws of this State.

*In Testimony Whereof*, I hereto set my hand and cause to be affixed the Great Seal of State. Done at the City of Springfield, this 16th day of September, in the year of our Lord one thousand eight hundred and ninety-three, and of the Independence of the United States the one hundred and eighteenth.

W. H. HINRICHSSEN,

[SEAL]

*Secretary of State.*

TO HON. WILLIAM H. HINRICHSSEN,

SECRETARY OF STATE:

SIR:

We, the undersigned citizens of the United States, propose to form a corporation under an act of the General Assembly of the State of Illinois, entitled "An Act Concerning Corporations," approved April 18, 1872, and all acts amendatory thereof; and that for the purposes of such organization we hereby state as follows, to-wit:

1. The name of such corporation is the "COLUMBIAN MUSEUM OF CHICAGO."

2. The object for which it is formed is for the accumulation and dissemination of knowledge, and the preservation and exhibition of objects illustrating Art, Archæology, Science and History.

3. The management of the aforesaid museum shall be vested in a Board of FIFTEEN (15) TRUSTEES, five of whom are to be elected every year.

4. The following named persons are hereby selected as the Trustees for the first year of its corporate existence:

Edward E. Ayer, Charles B. Farwell, George E. Adams, George R. Davis, Charles L. Hutchinson, Daniel H. Burnham, John A. Roche, M. C. Bullock, Emil G. Hirsch, James W. Ellsworth, Allison V. Armour, O. F. Aldis, Edwin Walker, John C. Black and Frank W. Gunsaukus.

5. The location of the Museum is in the City of Chicago, County of Cook, and State of Illinois.

(Signed)

George E. Adams, C. B. Farwell, Sidney C. Eastman, F. W. Putnam, Robert McCurdy, Andrew Peterson, L. J. Gage, Charles L. Hutchinson, Ebenezer

Buckingham, Andrew McNally, Edward E. Ayer, John M. Clark, Herman H. Kohlsaat, George Schneider, Henry H. Getty, William R. Harper, Franklin H. Head, E. G. Keith, J. Irving Pearce, Azel F. Hatch, Henry Wade Rogers, Thomas B. Bryan, L. Z. Leiter, A. C. Bartlett, A. A. Sprague, A. C. McClurg, James W. Scott, Geo. F. Bissell, John R. Walsh, Chas. Fitzsimmons, John A. Roche, E. B. McCagg, Owen F. Aldis, Ferdinand W. Peck, James H. Dole, Joseph Stockton, Edward B. Butler, John McConnell, R. A. Waller, H. C. Chatfield-Taylor, A. Crawford, Wm. Sooy Smith, P. S. Peterson, John C. Black, Jno. J. Mitchell, C. F. Gunther, George R. Davis, Stephen A. Forbes, Robert W. Patterson, Jr., M. C. Bullock, Edwin Walker, George M. Pullman, William E. Curtis, James W. Ellsworth, William E. Hale, Wm. T. Baker, Martin A. Ryerson, Huntington W. Jackson, N. B. Ream, Norman Williams, Melville E. Stone, Bryan Lathrop, Eliphalet W. Blatchford, Philip D. Armour.

STATE OF ILLINOIS }  
COOK COUNTY } SS.

I, G. R. MITCHELL, a NOTARY PUBLIC in and for said County, do hereby certify that the foregoing petitioners personally appeared before me and acknowledged severally that they signed the foregoing petition as their free and voluntary act for the uses and purposes therein set forth.

Given under my hand and notarial seal this 14th day of September, 1893.

G. R. MITCHELL,  
[SEAL] NOTARY PUBLIC, COOK COUNTY, ILL.

#### CHANGE OF NAME

Pursuant to a resolution passed at a meeting of the corporate members held the 25th day of June, 1894, the name of the COLUMBIAN MUSEUM was changed to FIELD COLUMBIAN MUSEUM. A certificate to this effect was filed June 26, 1894, in the office of the Secretary of State for Illinois.

#### CHANGE OF NAME

Pursuant to a resolution passed at a meeting of the corporate members held the 8th day of November, 1905, the name of the FIELD COLUMBIAN MUSEUM was changed to FIELD MUSEUM OF NATURAL HISTORY. A certificate to this effect was filed November 10, 1905, in the office of the Secretary of State for Illinois.

#### CHANGE IN ARTICLE 3

Pursuant to a resolution at a meeting of the corporate members held the 10th day of May, 1920, the management of FIELD MUSEUM OF NATURAL HISTORY shall be invested in a Board of TWENTY-ONE (21) TRUSTEES, who shall be elected in such manner and for such time and term of office as may be provided for by the By-Laws. A certificate to this effect was filed May 21, 1920, in the office of the Secretary of State for Illinois.

## AMENDED BY-LAWS

JANUARY 1928

### ARTICLE I

#### MEMBERS

SECTION 1. Members shall be of eleven classes, Corporate Members, Honorary Members, Patrons, Benefactors, Fellows, Life Members, Non-Resident Life Members, Associate Members, Non-Resident Associate Life Members, Sustaining Members, and Annual Members.

SECTION 2. The Corporate Members shall consist of the persons named in the articles of incorporation, and of such other persons as shall be chosen from time to time by the Board of Trustees at any of its meetings, upon the recommendation of the Executive Committee; provided, that such person named in the articles of incorporation shall, within ninety days from the adoption of these By-Laws, and persons hereafter chosen as Corporate Members shall, within ninety days of their election, pay into the treasury the sum of twenty dollars (\$20.00) or more. Corporate Members becoming Life Members, Patrons or Honorary Members shall be exempt from dues. Annual meetings of said Corporate Members shall be held at the same place and on the same day that the annual meeting of the Board of Trustees is held.

SECTION 3. Honorary Members shall be chosen by the Board from among persons who have rendered eminent service to science, and only upon unanimous nomination of the Executive Committee. They shall be exempt from all dues.

SECTION 4. Patrons shall be chosen by the Board upon recommendation of the Executive Committee from among persons who have rendered eminent service to the Museum. They shall be exempt from all dues, and, by virtue of their election as Patrons, shall also be Corporate Members.

SECTION 5. Any person contributing or devising the sum of One Hundred Thousand Dollars (\$100,000.00) in cash, or securities, or property to the funds of the Museum, may be elected a Benefactor of the Museum.

SECTION 6. Any person contributing the sum of Five Thousand Dollars (\$5,000.00) in cash or securities to the funds of the Museum, may be elected a Fellow of the Museum, who after being so elected shall have the right in perpetuity to appoint the successor in said Fellowship.

SECTION 7. Any person paying into the treasury the sum of Five Hundred Dollars (\$500.00), at any one time, shall, upon the unanimous vote of the Board, become a Life Member. Life Members shall be exempt from all dues, and shall enjoy all the privileges and courtesies of the Museum that are accorded to members of the Board of Trustees. Any person residing fifty miles or more from the city of Chicago, paying into the treasury the sum of One Hundred Dollars (\$100.00) at any one time, shall, upon the unanimous vote of the Board, become a Non-Resident Life Member. Non-Resident Life Members shall be exempt from all dues, and shall enjoy all the privileges and courtesies of the Museum that are accorded to members of the Board of Trustees.

SECTION 8. Any person paying into the treasury of the Museum the sum of one hundred dollars (\$100.00), at any one time, shall upon the unanimous vote of the Board, become an Associate Member. Associate Members shall be entitled to: tickets admitting member and members of family, including non-resident home guests; all publications of the Museum, if so desired; reserved seats for all lectures and entertainments under the auspices of the Museum, provided reservation is requested in advance; and admission of holder of membership and accompanying party to all special exhibits and Museum functions day or evening. Any person residing fifty miles or more from the city of Chicago, paying into the treasury the sum of Fifty Dollars (\$50.00) at any one time, shall, upon the unanimous vote of the Board, become a Non-Resident Associate Life

Member. Non-Resident Associate Life Members shall be exempt from all dues, and shall enjoy all the privileges and courtesies of the Museum that are accorded to Associate Members.

SECTION 9. Sustaining Members shall consist of such persons as are selected from time to time by the Board of Trustees at any of its meetings, and who shall pay an annual fee of twenty-five dollars (\$25.00), payable within thirty days after notice of election and within thirty days after each recurring annual date. This Sustaining Membership entitles the member to free admission for the member and family to the Museum on any day, the Annual Report and such other Museum documents or publications as may be requested in writing. When a Sustaining Member has paid the annual fee of \$25.00 for six years, such member shall be entitled to become an Associate Member.

SECTION 10. Annual Members shall consist of such persons as are selected from time to time by the Board of Trustees at any of its meetings, and who shall pay an annual fee of ten dollars (\$10.00), payable within thirty days after each recurring annual date. An Annual Membership shall entitle the member to a card of admission for the member and family during all hours when the Museum is open to the public, and free admission for the member and family to all Museum lectures or entertainments. This membership will also entitle the holder to the courtesies of the membership privileges of every Museum of note in the United States and Canada, so long as the existing system of co-operative interchange of membership tickets shall be maintained, including tickets for any lectures given under the auspices of any of the Museums during a visit to the cities in which the cooperative museums are located.

SECTION 11. All membership fees, excepting Sustaining and Annual, shall hereafter be applied to a permanent Membership Endowment Fund, the interest only of which shall be applied for the use of the Museum as the Board of Trustees may order.

## ARTICLE II

### BOARD OF TRUSTEES

SECTION 1. The Board of Trustees shall consist of twenty-one members. The respective members of the Board now in office, and those who shall hereafter be elected, shall hold office during life. Vacancies occurring in the Board shall be filled at a regular meeting of the Board, upon the nomination of the Executive Committee made at a preceding regular meeting of the Board, by a majority vote of the members of the Board present.

SECTION 2. Regular meetings of the Board shall be held on the third Monday of each month. Special meetings may be called at any time by the President, and shall be called by the Secretary upon the written request of three Trustees. Five Trustees shall constitute a quorum, except for the election of officers or the adoption of the Annual Budget, when seven Trustees shall be required, but meetings may be adjourned by any less number from day to day, or to a day fixed, previous to the next regular meeting.

SECTION 3. Reasonable written notice, designating the time and place of holding meetings, shall be given by the Secretary.

## ARTICLE III

### HONORARY TRUSTEES

SECTION 1. As a mark of respect, and in appreciation of services performed for the Institution, those Trustees who by reason of inability, on account of change of residence, or for other cause or from indisposition to serve longer in such capacity shall resign their place upon the Board, may be elected, by a majority of those present at any regular meeting of the Board, an Honorary Trustee for life. Such Honorary Trustee will receive notice of all meetings of the Board of Trustees, whether regular or special, and will be expected to be present at all such meetings and participate in the deliberations thereof, but an Honorary Trustee shall not have the right to vote.

## ARTICLE IV

## OFFICERS

SECTION 1. The officers shall be a President, a First Vice-President, a Second Vice-President, a Third Vice-President, a Secretary, an Assistant Secretary and a Treasurer. They shall be chosen by ballot by the Board of Trustees, a majority of those present and voting being necessary to elect. The President, the First Vice-President, the Second Vice-President, and the Third Vice-President shall be chosen from among the members of the Board of Trustees. The meeting for the election of officers shall be held on the third Monday of January of each year, and shall be called the Annual Meeting.

SECTION 2. The officers shall hold office for one year, or until their successors are elected and qualified, but any officer may be removed at any regular meeting of the Board of Trustees by a vote of two-thirds of all the members of the Board. Vacancies in any office may be filled by the Board at any meeting.

SECTION 3. The officers shall perform such duties as ordinarily appertain to their respective offices, and such as shall be prescribed by the By-Laws, or designated from time to time by the Board of Trustees.

## ARTICLE V

## THE TREASURER

SECTION 1. The Treasurer shall be custodian of the funds of the Corporation except as hereinafter provided. He shall make disbursements only upon warrants drawn by the Director and countersigned by the President. In the absence or inability of the Director, warrants may be signed by the Chairman of the Finance Committee, and in the absence or inability of the President, may be countersigned by one of the Vice-Presidents, or any member of the Finance Committee.

SECTION 2. The securities and muniments of title belonging to the corporation shall be placed in the custody of some Trust Company of Chicago to be designated by the Board of Trustees, which Trust Company shall collect the income and principal of said securities as the same become due, and pay same to the Treasurer, except as hereinafter provided. Said Trust Company shall allow access to and deliver any or all securities or muniments of title to the joint order of the following officers, namely The President or one of the Vice-Presidents, jointly with the Chairman, or one of the Vice-Chairmen, of the Finance Committee of the Museum.

SECTION 3. The Treasurer shall give bond in such amount, and with such sureties as shall be approved by the Board of Trustees.

SECTION 4. The Harris Trust & Savings Bank of Chicago shall be Custodian of "The N. W. Harris Public School Extension of Field Museum" fund. The bank shall make disbursements only upon warrants drawn by the Director and countersigned by the President. In the absence or inability of the Director, warrants may be signed by the Chairman of the Finance Committee, and in the absence or inability of the President, may be countersigned by one of the Vice-Presidents, or any member of the Finance Committee.

## ARTICLE VI

## THE DIRECTOR

SECTION 1. The Board of Trustees shall elect a Director of the Museum, who shall remain in office until his successor shall be elected. He shall have immediate charge and supervision of the Museum, and shall control the operations of the Institution, subject to the authority of the Board of Trustees and its Committees. The Director shall be the official medium of communication between the Board, or its Committees, and the scientific staff and maintenance force.

SECTION 2. There shall be four scientific departments of the Museum—Anthropology, Botany, Geology and Zoology; each under the charge of a

Curator, subject to the authority of the Director. The Curators shall be appointed by the Board upon the recommendation of the Director, and shall serve during the pleasure of the Board. Subordinate staff officers in the scientific departments shall be appointed and removed by the Director upon the recommendation of the Curators of the respective Departments. The Director shall have authority to employ and remove all other employees of the Museum.

SECTION 3. The Director shall make report to the Board at each regular meeting, recounting the operations of the Museum for the previous month. At the Annual Meeting, the Director shall make an Annual Report, reviewing the work for the previous year, which Annual Report shall be published in pamphlet form for the information of the Trustees and Members, and for free distribution in such number as the Board may direct.

## ARTICLE VII

### AUDITOR

SECTION 1. The Board shall appoint an Auditor, who shall hold his office during the pleasure of the Board. He shall keep proper books of account, setting forth the financial condition and transactions of the Corporation, and of the Museum, and report thereon at each regular meeting, and at such other times as may be required by the Board. He shall certify to the correctness of all bills rendered for the expenditure of the money of the Corporation.

## ARTICLE VIII

### COMMITTEES

SECTION 1. There shall be five Committees, as follows: Finance, Building, Auditing, Pension and Executive.

SECTION 2. The Finance Committee shall consist of five members, the Auditing and Pension Committees shall each consist of three members, and the Building Committee shall consist of five members. All members of these four Committees shall be elected by ballot by the Board at the Annual Meeting, and shall hold office for one year, and until their successors are elected and qualified. In electing the members of these Committees, the Board shall designate the Chairman and Vice-Chairman by the order in which the members are named in the respective Committee; the first member named shall be Chairman, the second named the Vice-Chairman, and the third named, Second Vice-chairman, succession to the Chairmanship being in this order in the event of the absence or disability of the Chairman.

SECTION 3. The Executive Committee shall consist of the President of the Board, the Chairman of the Finance Committee, the Chairman of the Building Committee, the Chairman of the Auditing Committee, the Chairman of the Pension Committee, and three other members of the Board to be elected by ballot at the Annual Meeting.

SECTION 4. Four members shall constitute a quorum of the Executive Committee, and in all standing Committees two members shall constitute a quorum. In the event that, owing to the absence or inability of members, a quorum of the regular elected members cannot be present at any meeting of any Committee, then the Chairman thereof, or his successor, as herein provided, may summon any members of the Board of Trustees to act in place of the absentee.

SECTION 5. The Finance Committee shall have supervision of investing the endowment and other permanent funds of the Corporation, and the care of such real estate as may become its property. It shall have authority to invest, sell, and reinvest funds, subject to the approval of the Board.

SECTION 6. The Building Committee shall have supervision of the construction, reconstruction, and extension of any and all buildings used for Museum purposes.

SECTION 7. The Executive Committee shall be called together from time to time as the Chairman may consider necessary, or as he may be requested

to do by three members of the Committee, to act upon such matters affecting the administration of the Museum as cannot await consideration at the Regular Monthly Meetings of the Board of Trustees. It shall, before the beginning of each fiscal year, prepare and submit to the Board an itemized Budget, setting forth the probable receipts from all sources for the ensuing year, and make recommendations as to the expenditures which should be made for routine maintenance and fixed charges. Upon the adoption of the Budget by the Board, the expenditures as stated are authorized.

SECTION 8. The Auditing Committee shall have supervision over all accounting and bookkeeping, and full control of the financial records. It shall cause the same, once each year, or oftener, to be examined by an expert individual or firm, and shall transmit the report of such expert individual or firm to the Board at the next ensuing regular meeting after such examination shall have taken place.

SECTION 9. The Pension Committee shall determine by such means and processes as shall be established by the Board of Trustees to whom and in what amount the Pension Fund shall be distributed. These determinations or findings shall be subject to the approval of the Board of Trustees.

SECTION 10. The Chairman of each Committee shall report the acts and proceedings thereof at the next ensuing regular meeting of the Board.

SECTION 11. The President shall be ex-officio a member of all Committees and Chairman of the Executive Committee. Vacancies occurring in any Committee may be filled by ballot at any regular meeting of the Board.

## ARTICLE IX

### NOMINATING COMMITTEE

SECTION 1. At the November meeting of the Board each year, a Nominating Committee of three shall be chosen by lot. Said Committee shall make nominations for membership of the Finance Committee, the Building Committee, the Auditing Committee, and the Pension Committee, and for three members of the Executive Committee, from among the Trustees, to be submitted at the ensuing December meeting and voted upon at the following Annual Meeting in January.

## ARTICLE X

SECTION 1. Whenever the word "Museum" is employed in the By-Laws of the Corporation, it shall be taken to mean the building in which the Museum as an Institution is located and operated, the material exhibited, the material in study collections, or in storage, furniture, fixtures, cases, tools, records, books, and all appurtenances of the Institution and the workings, researches, installations, expenditures, field work, laboratories, library, publications, lecture courses, and all scientific and maintenance activities.

SECTION 2. These By-Laws may be amended at any regular meeting of the Board of Trustees by a two-thirds vote of all the members present, provided the amendment shall have been proposed at a preceding regular meeting.



EGG-LAYING DINOSAURS (*Protoceratops*)  
Mural painting by Charles R. Knight  
Ernest R. Graham Hall (Hall 38)





## FOUNDER

\*MARSHALL FIELD

## BENEFACTORS

*Those who have contributed \$100,000 or more to the Museum*

- |                          |                           |
|--------------------------|---------------------------|
| *AYER, EDWARD E.         | *HARRIS, NORMAN W.        |
| BUCKINGHAM, MISS KATE S. | *HIGINBOTHAM, HARLOW N.   |
| *FIELD, JOSEPH N.        | *PULLMAN, GEORGE M.       |
| FIELD, CAPTAIN MARSHALL  | RAYMOND, MRS. ANNA LOUISE |
| FIELD, STANLEY           | *RAYMOND, JAMES NELSON    |
| GRAHAM, ERNEST R.        | SIMPSON, JAMES            |
| HARRIS, ALBERT W.        | *STURGES, MRS. MARY D.    |

## HONORARY MEMBERS

*Those who have rendered eminent service to Science*

- |                          |                                |
|--------------------------|--------------------------------|
| *AYER, EDWARD E.         | *JONES, ARTHUR B.              |
| AYER, MRS. EDWARD E.     | KEEP, CHAUNCEY                 |
| BLACKSTONE, MRS. T. B.   | LUDWIG, H. R. H. GUSTAF ADOLF, |
| BREASTED, PROF. JAMES H. | CROWN PRINCE OF SWEDEN         |
| CHALMERS, WILLIAM J.     | MCCORMICK, STANLEY             |
| CRANE, CHARLES R.        | ROSENWALD, JULIUS              |
| CRANE, RICHARD T., JR.   | ROSENWALD, MRS. AUGUSTA N.     |
| FIELD, CAPTAIN MARSHALL  | RYERSON, MARTIN A.             |
| FIELD, STANLEY           | SARGENT, HOMER E.              |
| GRAHAM, ERNEST R.        | SIMPSON, JAMES                 |
| HARRIS, ALBERT W.        | SPRAGUE, ALBERT A.             |

## PATRONS

*Those who have rendered eminent service to the Museum*

- |                          |                        |
|--------------------------|------------------------|
| *AKELEY, CARL E.         | KNIGHT, CHARLES R.     |
| ARMOUR, ALLISON V.       | KUNZ, GEORGE F.        |
| BORLAND, MRS. JOHN JAY   | LANGDON, PROF. STEPHEN |
| BUTLER, EDWARD B.        | MARKHAM, CHARLES H.    |
| CHERRIE, GEORGE K.       | *MITCHELL, JOHN J.     |
| COLLINS, ALFRED M.       | PAYNE, JOHN BARTON     |
| CONOVER, BOARDMAN        | PROBST, EDWARD         |
| CUMMINGS, MRS. ROBERT F. | RAWSON, FREDERICK H.   |
| CUTTING, C. SUYDAM       | ROOSEVELT, KERMIT      |
| DAY, LEE GARNETT         | ROOSEVELT, THEODORE    |
| ELLSWORTH, DUNCAN S.     | SARGENT, HOMER E.      |
| KELLEY, WILLIAM V.       | SMITH, MRS. GEORGE T.  |
| KENNEDY, VERNON SHAW     | STRAWN, SILAS H.       |
|                          | WHITE, HOWARD J.       |

\*DECEASED

# CORPORATE MEMBERS

\*AKELEY, CARL E.  
 ARMOUR, ALLISON V.  
 \*AYER, EDWARD E.  
 BLAIR, WATSON F.  
 BORDEN, JOHN  
 BORLAND, MRS. JOHN JAY  
 BUTLER, EDWARD B.  
 BYRAM, HARRY E.  
 CHALMERS, W. J.  
 CHATFIELD-TAYLOR, H. C.  
 CHERRIE, GEORGE K.  
 COLLINS, ALFRED M.  
 CONOVER, BOARDMAN  
 CRANE, RICHARD T., JR.  
 CUMMINGS, MRS. ROBERT F.  
 CUTTING, C. SUYDAM  
 DAVIES, D. C.  
 DAY, LEE GARNETT  
 EASTMAN, SIDNEY C.  
 ELLSWORTH, DUNCAN S.  
 FIELD, CAPTAIN MARSHALL  
 FIELD, STANLEY  
 \*GAGE, LYMAN J.  
 GRAHAM, ERNEST R.  
 HARRIS, ALBERT W.  
 \*JONES, ARTHUR B.

KEEP, CHAUNCEY  
 KELLEY, WILLIAM V.  
 KENNEDY, VERNON SHAW  
 KNIGHT, CHARLES R.  
 KUNZ, GEORGE F.  
 LANGDON, PROF. STEPHEN  
 MCCORMICK, CYRUS H.  
 MARKHAM, CHARLES H.  
 \*MITCHELL, JOHN J.  
 MITCHELL, WILLIAM H.  
 PAYNE, JOHN BARTON  
 \*PORTER, GEORGE F.  
 PROBST, EDWARD  
 RAWSON, FREDERICK H.  
 ROOSEVELT, KERMIT  
 ROOSEVELT, THEODORE  
 RYERSON, MARTIN A.  
 SARGENT, HOMER E.  
 SIMPSON, JAMES  
 SMITH, MRS. GEORGE T.  
 SMITH, SOLOMON A.  
 SPRAGUE, ALBERT A.  
 STONE, MELVILLE E.  
 STRAWN, SILAS H.  
 WHITE, HOWARD J.  
 WRIGLEY, WILLIAM, JR.

\*DECEASED

## LIFE MEMBERS

*Those who have contributed \$500 to the Museum*

- ABBOTT, ROBERT S.  
ALDIS, ARTHUR T.  
ALEXANDER, WILLIAM A.  
ALLERTON, ROBERT H.  
AMES, JAMES C.  
AMES, KNOWLTON L.  
ARMOUR, ALLISON V.  
ARMOUR, A. WATSON  
ARMOUR, LESTER  
AVERY, SEWELL L.
- BABCOCK, FREDERICK R.  
BACON, EDWARD RICHARDSON, JR.  
BANKS, ALEXANDER F.  
BARRETT, MRS. A. D.  
BARRETT, ROBERT L.  
BASSFORD, LOWELL C.  
BENDIX, VINCENT  
BENSABOTT, R.  
BILLINGS, C. K. G.  
BILLINGS, DR. FRANK  
BLACKSTONE, MRS. T. B.  
BLAINE, MRS. EMMONS  
BLAIR, HENRY A.  
BLAIR, WATSON F.  
BLOCK, L. E.  
BLOCK, PHILIP D.  
BOOTH, W. VERNON  
BORDEN, JOHN  
BORDEN, MRS. WALLER  
BORLAND, CHAUNCEY B.  
BRADLEY, J. DORR  
BRANNAN, GEORGE E.  
BREWSTER, WALTER S.  
BROSS, MRS. MASON  
BROWN, CHARLES EDWARD  
BROWN, WILLIAM L.  
BUCHANAN, D. W.  
BUDD, BRITTON I.  
BUFFINGTON, EUGENE J.  
BURNHAM, JOHN  
BURT, WILLIAM G.  
BUTLER, EDWARD B.  
BUTLER, JULIUS W.  
BYRAM, HARRY E.
- CARPENTER, AUGUSTUS A.  
CARPENTER, MRS. HUBBARD  
CARR, ROBERT F.  
CARRY, EDWARD F.
- CARTON, L. A.  
CHALMERS, WILLIAM J.  
CHALMERS, MRS. WILLIAM J.  
CHANDLER, REUBEN G.  
CLARK, EUGENE B.  
CLAY, JOHN  
CLEGG, MRS. HENRY G.  
CLEGG, WILLIAM G.  
CLEGG, MRS. WILLIAM G.  
CLINCH, R. FLOYD  
CLOW, WILLIAM E.  
CONOVER, BOARDMAN  
COPLEY, COL. IRA CLIFF, (N. R.)  
CORLEY, F. D.  
COWLES, ALFRED  
CRAMER, CORWITH  
CRAMER, E. W.  
CRAMER, MRS. KATHARINE S.  
CRANE, CHARLES R.  
CRANE, RICHARD T., JR.  
CROSSETT, EDWARD C.  
CROSSLEY, SIR KENNETH  
CROSSLEY, LADY JOSEPHINE  
CROWELL, H. P.  
CUDAHY, EDWARD A.,  
CUDAHY, EDWARD A., JR.  
CUDAHY, JOSEPH M.  
CUMMINGS, D. MARK  
CUNNINGHAM, FRANK S.  
CUNNINGHAM, JAMES D.  
CURTIS, MRS. ROBERT M.  
CUTTEN, ARTHUR W.
- DAU, J. J.  
DAVIES, D. C.  
DAVIES, MRS. D. C.  
DAWES, CHARLES G.  
DAY, ALBERT M.  
DECKER, ALFRED  
DEFREES, JOSEPH H.  
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EXCAVATING A SKELETON OF THE GREAT GROUND SLOTH  
(*Megatherium Americanum*)  
Río Quequen Salada, Argentina, South America  
Captain Marshall Field Paleontological Expedition to Argentina and Bolivia, 1925-7

HUTCHINS, JAMES C.  
HUTCHINSON, FOYE P.  
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# 362 FIELD MUSEUM OF NATURAL HISTORY—REPORTS, VOL. VII

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KELLOGG, LEROY D.  
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KLINE, LOUIS A.  
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LEIGHT, EDWARD A.  
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 LEVITETZ, NATHAN  
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 LITTLE, JOHN G.  
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 LOEWENSTEIN, NATHAN  
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 LOSZKIN, SERJE  
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 LUDWIG, WILLIAM F.  
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MAGNUS, PHILIP H.  
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MANASTER, HENRY  
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MANSON, MRS. DAVID  
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MARSHALL, EDWARD  
MARSHALL, RAPHAEL P.  
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MARTIN, MELLEN C.  
MARTIN, Z. E.  
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MASON, FRED B.  
MASON, GEORGE, JR.  
MASSENA, ROY  
MASSMANN, FREDERICK H.  
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MCDONALD, MRS. JOHN GRANT  
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# 372 FIELD MUSEUM OF NATURAL HISTORY—REPORTS, VOL. VII

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# 374 FIELD MUSEUM OF NATURAL HISTORY—REPORTS, VOL. VII

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376 FIELD MUSEUM OF NATURAL HISTORY—REPORTS, VOL. VII

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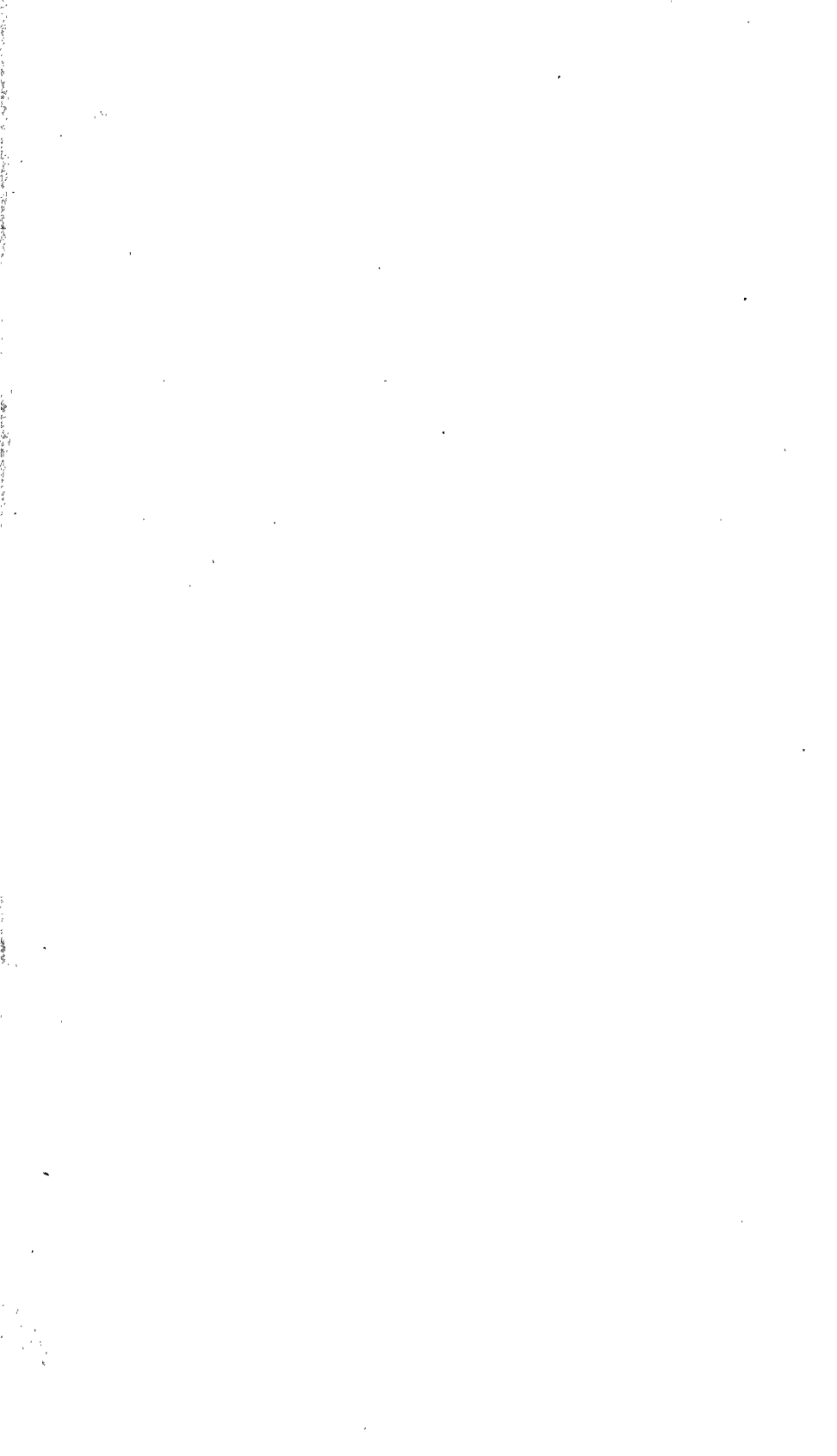
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